How Contractor Sharpened Operation . . . Pg. 28

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Solar Heat Feasible, But Not Practical In New England—MIT

LEXINGTON, Mass. — Feasible, but not practical in New England.

That is the conclusion of Massachuetts Institute of Technology scientists at the completion of a three-year study of solar heating for a three-bedroom house here.

Solar energy gathered in by a collector which formed all of the combined roof and wall of the south side of the two-story

(Continued on Page 39, Col. 3)

Outlook Rosier As

Late Heat Wave Buoys Air Conditioning Sales

NEW YORK CITY — Combination of a late August-early September heat wave that broke records throughout the East plus a general improvement in market conditions have tended to make things look a little bit rosier in the air conditioning industry.

One manufacturer of a broad line of equipment reported that his order backlog, generally at a relatively low point at this time of year, was the best in months.

Another manufacturer reported regretting having to go through with a late summer vacation schedule, whereas in other years it was often desirable to "stretch out" a vacation period.

In New York City, which has had record-breaking temperatures and very high humidities for nearly two straight weeks, there were reports that there was some cleanout of inventories of room air conditioners, and even some ordering of new merchandise from distributors.

"Some dealers stayed open over Labor Day," said one N. Y. distributor sales manager, "and then volume on air conditioning was so good they would have ordered more units from us if they could have gotten delivery.

"We're getting pretty good action on orders now, at the end of the first week in September. The inventory situation should certainly be a lot better for the start of the next selling season."

"And boy, this should really condition the public for getting air conditioning for their homes by next summer," another distributor gleefully noted.

Residential sales hit peak in Dallas-Fort Worth area. Details on this and other area sales are on page 2. Weather outlook for September appears on the back page.

Hot Workers Walk

MAHWAH, N. J. — Some 2,000 workers at the Ford Motor Co. production plant here walked off their jobs Sept. 5 when the heat reached a record-breaking 93°F in this area.

Workers in the body shop started walking out about 11 a.m. and large numbers of other workers never returned from lunch.

It has been widely speculated that air conditioning of production plants might become an issue in labor negotiations some day in the not-too-distant future.

Vulcan-Hart Purchases Ideal Cooler

LOUISVILLE, Ky. — W. M. Smock, president of Vulcan-Hart Corp. of Louisville and Baltimore, Md., has announced the cash purchase by Vulcan-Hart of 100% of the stock of Ideal Cooler Corp., St. Louis.

The price paid was $1,080,000, the announcement said.

Ideal Cooler, operated for the past 30 years by Louis Weiss, manufactures beverage coolers, reach-in refrigerators and freezers, and walk-in refrigerators. Its one plant in St. Louis covers about 70,000 sq ft of floor space.

Vulcan-Hart is a large manufacturer of commercial cooking equipment.

"The coolers will supplement our line and help to further round it out," Smock said. "Ideal's sales have run around

(Continued on Back Page, Col. 2)

Bid Procedure Set To Go In So. California

General Contractors To Refuse Bids Within 4 Hours of Opening

LOS ANGELES — After a year of negotiations between general and subcontractors and checking with Federal and state legal authorities, the Bidding Practices Conference of Southern California will be officially launched on Sept. 11, Henry B. Ely, co-counsel for the conference, announced recently.

The conference has set up a system of bidding procedures which members have agreed to follow. Most significant feature is an agreement on the part of general contractors that they will not accept any bid from a subcontractor less than four hours prior to opening, whether or not the subcontractor is signatory to the agreement.

Ely asserted that a subcontractor cannot afford to stay out of the conference if he bids to a general who is a member.

Whether or not the subcontractor is signatory to the conference, he will not be able to submit a bid within four hours of opening to a signatory general contractor.

If the subcontractor is signatory and he feels the general contractor has violated his agreement, he can appeal to the conference' conciliation committee and to arbitration procedures. If he is not a signatory, he has no recourse through the conference, Ely said.

Gas Heating Equipment Sales In July Rise 7.9% Over Year Ago

NEW YORK CITY—Manufacturers of gas-fired residential central heating equipment shipped 103,550 units in July, 7.9% more than they sold in the same month last year, the Gas Appliance Manufacturers Association reports.

The month's unit sales brought the total for the first seven months of this year to 599,885, a 0.4% improvement over the 597,721 sent to market in the first seven months of 1960.

GAMA's monthly telegraphic survey of manufacturers, conducted by the association's director of marketing and statistics, Edward R. Martin, showed the producers dispatched 79,700 **gas furnaces** in July, an increase of 6.6% over the 74,800 shipped in July, 1960. **Gas boilers** accounted for 13,550 units of the month's total, 16% more than the 11,680 forwarded last year.

Conversion burners, which are used to adapt existing furnaces and boilers from solid and liquid fuels to gas, represented 10,300 units of the total for July. This also was a gain, amounting to 8.4% above last year's 9,500.

The seven-months total of the three types included 475,800 furnaces, 74,285 boilers, and 49,800 conversion burners. These amounts were up 1.3 and 6.7%, and down 14.9% respectively, from last year's comparable

(Continued on Back Page, Col. 1)

Inside Dope

By GEORGE F. TAUBENECK

Learn to live and laugh — thus delay your epitaph

New Hope for Over 50 Club

A reserve category of jobs in industry for mature workers is proposed by Edward L. Cushman, vice president in charge of industrial relations, American Motors Corp. (of which Kelvinator is a supporting division).

Before hearing his interesting proposal, let's review his qualifications for proposing.

Mr. Cushman aided in the technical studies preparatory to the drafting of Michigan's original Unemployment Compensation Legislation, and later became executive director of the Michigan Unemployment Compensation Commission.

He is a former Michigan director of the War Manpower Commission and of the U.S. Employment Service. A widely known industrial arbitrator, he has been a frequent advisor to government, labor, and industry.

Before joining American Motors, he was director of the Institute of Industrial Relations and professor of public administration at Wayne State university.

Under his plan, a specific list of jobs would be removed from normal operation of the seniority system, and be reserved for assignment to older workers.

"While the seniority system generally works to the advan-

(Continued on Page 16, Col. 1)

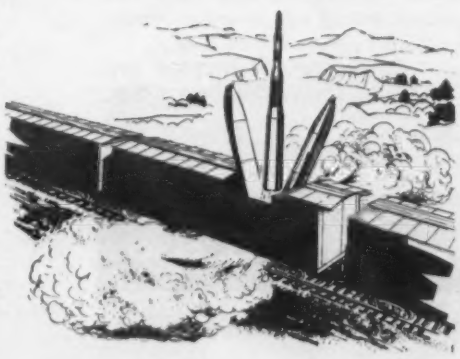
Contractor Meets Challenge

Air Conditioning Mobile Missile Train

DAYTON—The Strategic Air Command, cooperating with other military agencies and major civilian rail lines, conducted tests in the summer of 1960 in operating a test train designed to show how well a future fleet of actual missile trains could operate over existing tracks.

One of the technical problems faced in the 14-car mobile missile train was the air conditioning required for the "ready"

(Continued on Page 39, Col. 1)



ARTIST'S conception of Strategic Air Command's air conditioned mobile missile train depicts launching of a Minuteman missile.

Industry Reports on July-August Air Conditioning Sales

NHAW Members Report Dollar Volume Up 9% In July Over Year Ago

COLUMBUS, Ohio — The Northamerican Heating & Air-conditioning Wholesalers association reported that its "Trend Indicators point upward as construction continues to show gains and general business inches toward that long predicted fall upswing.

"In our own industry, sales and inventories are higher for the month (July) and for the seven-month period, and accounts receivable have generally improved."

The NHAW report shows that total dollar sales of reporting members were up an average of 8.71% in July over July, 1960, and up 6.8% for the first seven months of 1961. Inventories on July 31 were up 1.24% compared to a year earlier. Percentage of accounts receivable past due on July 31 was 27.64%.

Shipments to Distributor Gain 67% at Gibson

GREENVILLE, Mich.—Shipments of Gibson room air conditioners and dehumidifiers to distributors during August increased by 67% over the same month a year ago, W. C. Conley, president of Gibson Refrigerator Sales Corp., subsidiary of Hupp Corp., has announced.

Production of 1962 models begins this month, he said.

Dallas-Ft. Worth Home Unit Sales Soar

DALLAS—More central residential air conditioners were sold during the week ended Aug. 25 in the Dallas-Fort Worth area than in any previous week this year, figures supplied by three local utilities indicate.

The 119 units sold topped the best previous week by two units and doubled the number sold in the preceding week. Previous high week was that ending July 28.

Total tonnage sold amounted to 404 tons as compared with 395 in the July 28 week.

During the same week, 19 commercial and industrial jobs were sold totalling 277 tons. This was in the general range of weekly sales during July and August, though down considerably from the 29 jobs sold the preceding week.

Sales for the weeks of Aug. 18 and 25 are shown below:

Residential

Week Ends	No. Jobs	Total Tons
Aug. 18	59	215.5
Aug. 25	119	404

Commercial & Industrial

Week Ends	No. Jobs	Total Tons
Aug. 18	29	460.5
Aug. 25	19	277

Participating utilities are Texas Electric Service Co., Dallas Power & Light Co., and Lone Star Gas Co.

Mfr. Room Unit Sales Off In July, But Near '60 Total for 7 Mos.

DETROIT — Estimated sales by manufacturers of room air conditioners in July totaled 76,500 units, compared to 117,900 a year earlier, according to the National Electrical Manufacturers Association.

This brought sales for the first seven months of 1961 to 1,276,300 units, almost equal to the 1,277,800 sold in the like year-ago period. The figures are based on expansion of data reported to NEMA's Statistical Dept. to cover total industry sales including exports.

Reports on sales in July and the first seven months of this year also were received from utilities and associations in the Philadelphia; St. Petersburg, Fla.; Wichita, Kan.; southwestern Pennsylvania, and Washington-Idaho areas.

PHILADELPHIA

The Electrical Association of Philadelphia reported that distributor sales of room air conditioners in that area soared to 4,589 in July from 1,421 in July, 1960. However, sales for the first seven months lagged behind the corresponding period of last year, totaling 44,597 against 45,988.

Statistics compiled by Florida Power Corp., St. Petersburg, indicate that heat pump and air conditioning sales in that area rose 13.4% in July to 3,803 units from 3,353 in the previous July. For the first seven months, sales totaled 11,455, up 14.6% from the same period of 1960 when sales totaled 9,998.

July sales, the utility noted, includes 668 heat pumps (2,024 tons) in Capehart Housing at McCoy Air Force Base.

According to Kansas Gas & Electric Co., Wichita, room air conditioner sales by retailers in its territory dropped to 1,176 in July from 1,546 a year earlier. Sales in the first seven months were down 5.3%, amounting to 3,845 against 4,059.

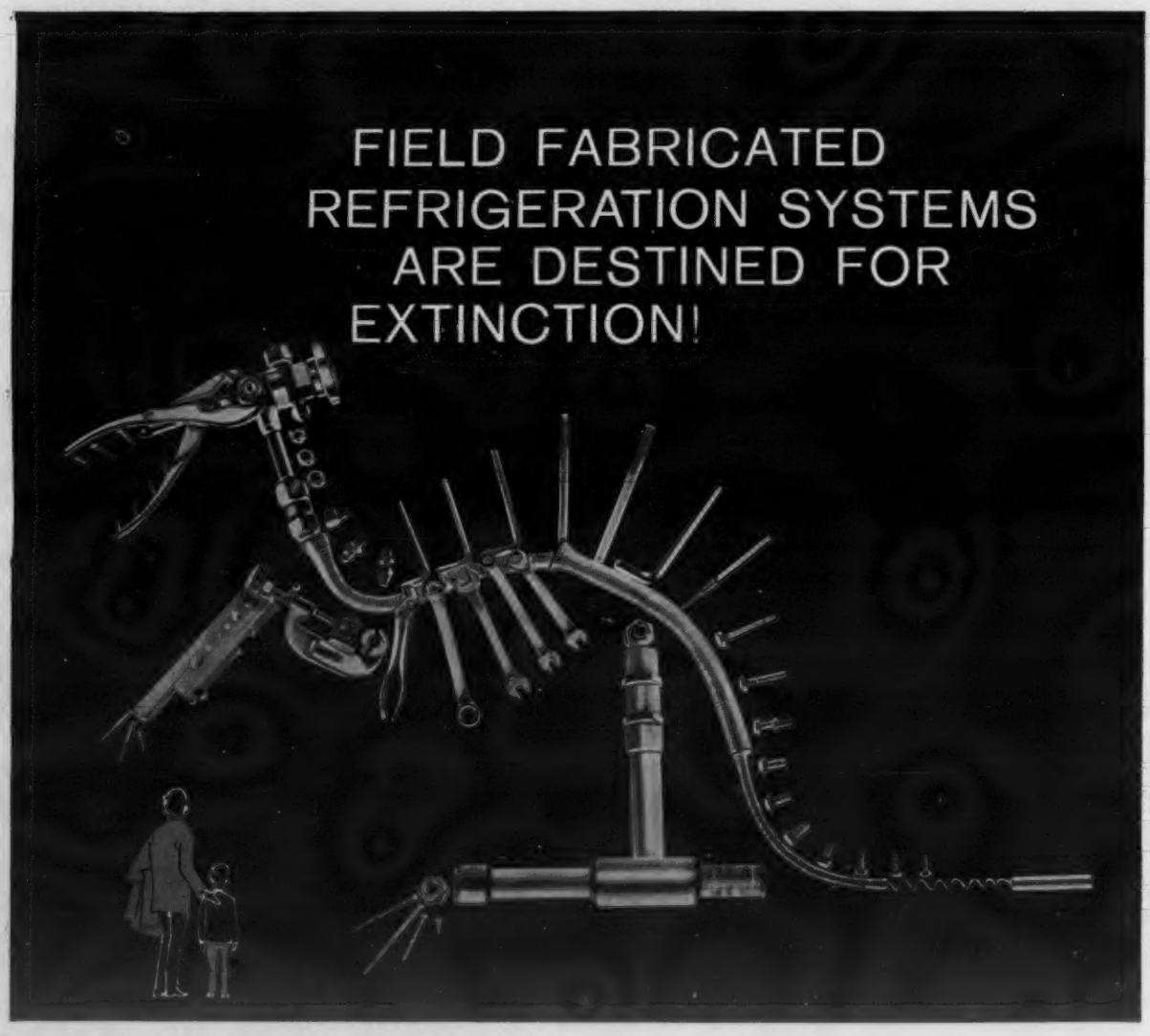
Sales of central-system air conditioners in the utility's area declined to 53 in July from 83. However, sales in the first seven months rose to 415 from 383, a gain of 8.4%.

WEST PENN

West Penn Power Co. reported that dealers in its area sold 380 room coolers in July, compared to 431 in the same month last year. First-seven-month sales totaled 1,153 against 1,674 in the like period of 1960.

A report by Washington Water Power Co., Spokane, shows sales of 47 central air conditioning units in July and 183 in the first seven months. A total of 371 room air conditioners were sold in July and 1,531 in the January-July period. No comparative figures were listed.

Pacific Gas & Electric Co. reported that room air conditioner sales in northern California in the first six months rose to 14,708 from 10,886 in the like 1960 period.



NEW KRAMER THERMOBANK-COMPRESSOR *Systems make field-fabrication as obsolete as dinosaurs and open a new era of opportunity in refrigeration.*

Gone is expensive, time-consuming and inefficient field-fabrication of refrigeration systems and with it your major headaches —shortage of skilled manpower and uncertain costs! Kramer's THERMOBANK-COMPRESSOR SYSTEMS are complete systems (high side and low side), factory engineered, instrumented, assembled, tested and run-in. For outdoor installations, they arrive on the job in all-weather aluminum housings, and "Winterstated" for year-'round automatic operation.

Requiring only connection of refrigerant lines and electrical service, they permit you to handle a much greater volume of business with your present skilled staff. Gone are costly delays for components; you get a complete Kramer System with a single order eliminating reams of paperwork. Kramer's System rating assures accurate predictable performance. Costs are predictable, too, since errors in assembly or labor and material estimates are obviated.

Your customers get a better buy and a better system incorporating Kramer pioneered features including the unique THERMOBANK re-evaporative defrost with all-season Winterstat control for any size job and any temperature level.

To learn how Kramer THERMOBANK-COMPRESSOR SYSTEMS can brighten your profit picture, request Bulletin C 484A.

KRAMER THERMOBANK-COMPRESSOR SYSTEMS

KRAMER TRENTON CO. Trenton 5, N. J.

48 YEARS OF CONTINUOUS ACHIEVEMENT IN HEAT TRANSFER

Gas Industry Sees Air Conditioning Leading Way To Brighter Decade

NEW YORK CITY—The gas industry will be serving 34% more customers and ringing up 114% more sales revenue by 1970, it was predicted here in an interim report to the Gas Appliance Manufacturers Association's 582 members.

Signs of a record-shattering decade for the industry already are evident in the field of residential, commercial, and industrial gas air conditioning, said William G. Hamilton, Jr., president.

By 1964, he predicted, gas air conditioning will have become a major factor in balancing year-round demand for natural and liquefied petroleum (bottled) gas.

Sees 65% More Customers by 1970

Hamilton predicted that the number of residential gas heating and cooling customers of the utilities alone will increase 65% by 1970, and that similar progress is likely in rural and suburban markets where homes are served by LP-gas.

The report includes statistics accounting for gas transmission and distribution progress between 1940 and 1960 and projected to 1970 on the basis of studies made recently by the AGA.

Among other things, it estimates total residential heating and cooling customers will increase from 20.7 million in 1960 to 33.7 million in 1970 and heating and cooling sales from 21.5 billion therms in 1960 to 39.9 billion in 1970.

"In the past, the end of each heating season meant having to find summer markets for gas," said Hamilton. "Now it appears, from the way builders and homeowners are adopting the fuel for both cooling and heating, that this problem of market-balancing will soon be eliminated."

Mass production and popular pricing of gas refrigerators, development of "plug-in" gas appliances for indoor and outdoor use, and major developments in pipe-line technology are among other advances forecast by Hamilton.

Harold Massey, GAMA managing director, envisioned extensive use of electronically controlled outdoor gas lighting.

Why Pipelines Will Be Busy

The GAMA official gave some additional reasons for his belief that the 925,000 miles of gas mains and pipelines projected by 1970 (the total was 632,000 in 1960) will be "kept busy." Among them:

- Further "compacting" of all residential gas equipment, such as furnaces, boilers, ranges, and water heaters.
- Use of various adaptations of the Schwank radiant burner. The Schwank burner, Massey explained, operates on the principle of the radiant gas heater which gains extra "heat throw" by heating a ceramic grid to incandescence. The Schwank burner employs as its grid a ceramic core pierced with hundreds of small holes through which a mixture of gas and air flows and burns on the outer surface.

The result, he said, is a compact, highly efficient unit that can be used effectively to provide concentrated heat in outdoor spaces, like sports arenas, swimming pools, and patios, and hard-to-heat industrial areas.

Application of these new heat generating units to a variety of industrial processes will unquestionably lead to smaller, more efficient home central heating systems, he said.

Projects to increase underground gas storage facilities by storing liquefied natural gas at -259°F in buried concrete tanks and to transport it "frozen" on ships are likely to bring results in the near future.

Marley Promotes, Moves Ketcham

KANSAS CITY, Mo.—After 12 years in the company's New York office, J. P. "Pete" Ketcham has been transferred to The Marley Co.'s Kansas City general office and is now manager of its Applied Products department.

Ketcham

He joined the company at its East Coast regional office in 1949 and, after several years became supervisor of distributor sales in the Manhattan area.

In his new capacity, Ketcham will direct the sale of Marley product lines for which the major market is the air conditioning industry.

Walton Sets Up Sales Regions, Appoints Hartwell, Welsh

IRVINGTON, N. J.—John B. Feldermann, president of Walton Laboratories, Inc., has announced the establishment of a new regional sales organization designed to provide closer field contact, faster distribution of Walton's line of humidifiers, and to increase facilities for the company's educational work.

Herbert E. Puttbach, Walton sales manager, has set Feldermann's program into motion with appointment of Frank Hartwell as eastern regional manager and John Welsh, Jr., as western regional manager.

Hartwell formerly was Walton's coordinator of distributor activities, and will continue to operate from the company's headquarters located here.

Welsh was district sales manager for American Pam-Cor, Inc., and he will manage all sales activities in the western region (all U. S. west of the Allegheny Mountains) from his office at 548 W. Washington Blvd., Chicago.

S-W Gets 3rd, Biggest Fort Rucker Order

LEBANON, Ind. — Stewart-Warner Heating & Air Conditioning Div. has received its third and largest order from the Fort Rucker project in Ozark, Ala.

The division will furnish 498 gas furnaces and 498 3-hp air conditioners.

Stewart-Warner supplied 426 air conditioning units to Fort Rucker on the first order and 400 gas furnaces and 400 air conditioners on the second.

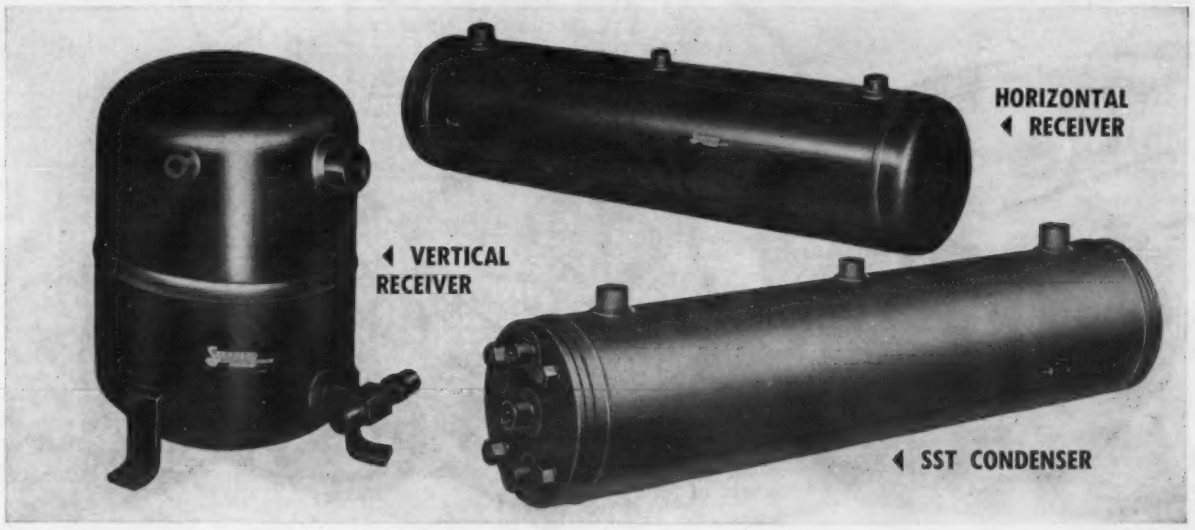
STANDARD

water-cooled

CONDENSERS

1/4 H.P. to 30 H.P.

U.L. or A.S.M.E. tagged



and LIQUID

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Manufacturers of LIQUID RECEIVERS, SHELL and TUBE, SHELL and COIL, and COUNTERFLOW CONDENSERS

National Distributor for Primore Rotalock Valves

Room Cooler Helps Ohio Family Survive Week In Fallout Shelter

MIDDLETOWN, Ohio — If you're going to take the trouble to survive a nuclear bombing, you might as well survive in comfort.

The Glen Roebuck family did recently when they spent a week inside an 8 by 12-ft fallout shelter set up in the Middletown Shopping Center.

The shelter was kept comfortable by a Fedders room air conditioner furnished by Neal's General Store, Jacksonburg.

Mr. and Mrs. Roebuck, their two-year-old son, and nine-month-old daughter lived for seven days in the shelter as a civic project. They demonstrated that it could be done in relative comfort in a compact shelter designed by Don W. Gingerich, president of the Aluminum Mfg. Co., Carlisle, Ohio.

The shelter contained six bunks, provision shelves, television set, table and chairs, telephone, chemical toilet, and a chemical stove and hot plate.

While the door to the shelter was kept securely closed, portholes that served as windows were almost constantly filled with curious faces.

The Roebucks reported that everything worked out well. Mrs. Roebuck said she turned the air conditioner off one night because "it got too cold."

Kool Kops

DETROIT — Air conditioning is a feature of Detroit's newest police station. The $874,000 station was dedicated recently.

York Names Carroll Works Manager

YORK, Pa.—Kenneth F. Carroll, formerly assistant factory manager for the Linde Co., Tonawanda, N. Y., a division of Union Carbide, has been named works manager of the York Div. of Borg-Warner Corp. according to Robert P. Marshall, vice president of manufacturing and materials.

Carroll will be responsible for coordinating the activities of plant engineering, industrial engineering, production control, and production supervision.

Hunzeker Promoted

LA CROSSE, Wis.—Myron E. Hunzeker was recently promoted to manager of The Trane Co. sales office in Peoria, Ill., W. D. Graham, Trane vice president announced.

Air Conditioning Helps Sell Houses, Real Estate Brokers Say

SYRACUSE, N. Y.—Surveys conducted among real estate brokers in Memphis, Tenn., and Savannah, Ga., found central air conditioning ranked third among the most wanted features in new homes in both cities.

The surveys, conducted by Carrier Air Conditioning Corp., found the desire for central air conditioning in Memphis outstripped only by a second bath and a fully-equipped kitchen.

More than 90% of the 329 Memphis brokers reported a marked increase in the demand for centrally air conditioned homes in Memphis and virtually the same percentage predicted the demand would continue to increase for the next five years.

Among the 40 Savannah brokers, 89% reported a marked increase in demand since 1956, and more than 90% predicted the trend would become more pronounced in the next five years.

Several Savannah brokers told Carrier they already had experienced some difficulties in locating a suitable home for buyers who insisted on central air conditioning.

More than 80% of the Savannah brokers believed central air conditioning adds to the value of the house and makes it easier to sell. Several brokers reported this was especially true of dwellings priced from $15,000 up.

A "large majority" of Memphis brokers said central systems added to the value of the houses and make them easier to sell. More than half said they had experienced some difficulty in locating houses for buyers who insisted on air conditioning.

In The Lead With Ucon® Refrigerants

"Fustest with the mostest" is Ucon Ike's history thus far, as witness the pioneering of the ring-top refrigerant cylinder, introduction of the handwheel cylinder valve, and instant cylinder deposit refunds . . . all important firsts in packaging and convenience.

And being in the lead is something Ucon Ike and the friendly folks he represents, firmly intend to *continue*. When you *really* need something, *we'll deliver* – whether it be in packaging conveniences or helpful service.

Our promise: being on our toes to meet *your* every on-the-job refrigerant need.

For the most compact and *convenient* line of refrigerants . . . See your Ucon Refrigerants wholesaler.

Ucon Refrigerants are manufactured by
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270 Park Avenue, New York 17, N. Y.

Exclusive Sales Agent to Air Conditioning and Refrigeration Wholesalers
ANSUL CHEMICAL COMPANY, Marinette, Wisconsin

Ucon is a registered trademark of Union Carbide Corporation

a UNION CARBIDE product — Ucon® refrigerants — exclusive sales agent ANSUL

San Diego Bureau Elects Lady Pres.

SAN DIEGO, Calif.—For the first time in the group's history, and a claimed "first" for any similar association in this field, a women will head the Bureau of Home Appliances of San Diego County.

The bureau's new president is Wilma Furstenfeld of H. L. Benbough Co. She has been on the board for several years, served on numerous committees, and has been an officer of the San Diego bureau for the past two years.

Other newly-elected officers are H. R. Ascher, Jr., Home Appliance Co., first vice president, and Robert Covell, R. L. Covell Co., second vice president. Jerry Heilbron, Heilbron Electrical Co., continues as treasurer.

A. E. Borden Opens Branch In Manchester

BOSTON—Another New England branch operation has been opened by A. E. Borden Co. at 60 Beech St. in Manchester, N. H.

Borden headquarters are at 1380 Boylston St. in Boston. In addition to Manchester, N. H., other branch warehouses are located in Portland, Me., and Providence, R. I.

Borden wholesales refrigeration and air conditioning supplies and equipment, "Scotsman" ice machines, Taylor ice cream freezers, and "Frosty" mobile dairy trucks.

Candy Profits Buy Coolers

TAMPA, Fla. — Candy bars meant comfort this summer for users of the library in Tampa's oldest grade school.

The librarian at the Robert E. Lee school enlisted the help of student librarians in selling candy bars during the last two years. The profit — $500 — was used to purchase two air conditioners.

The inside story of . . .

SIX ADDED VALUES IN NEW GENERAL ELECTRIC FAN MOTOR

1
Tripled supply of oil, now standard on all models. Gives added assurance of long, maintenance-free life.

2
Improved bearing system means same motor rating can do a bigger job, or same job with longer life.

3
New integral insulation system improves motor life and dependability; reduces noise.

4
New punching design results in up to 20 percent higher operating efficiencies.

5
Alkanex* insulation on wire provides superior resistance to heat aging, giving longer life.

6
Multi-function Surge Test adds new levels of quality control to assure design excellence is retained through the manufacturing process.

*Registered Trademark of General Electric Co.

When you use a General Electric 51-frame motor on your refrigeration or heating equipment, you're making certain that the motor is a strong link in the reliability and life of your product. Motor performance can mean the difference between profitable repeat business and customer dissatisfaction with your products.

Specify the General Electric unit-bearing, shaded-pole fan motor which gives you six advantages detailed in the cutaway above. These six added values mean the 51-frame motor is designed to match and even outlast the life of other components in your equipment.

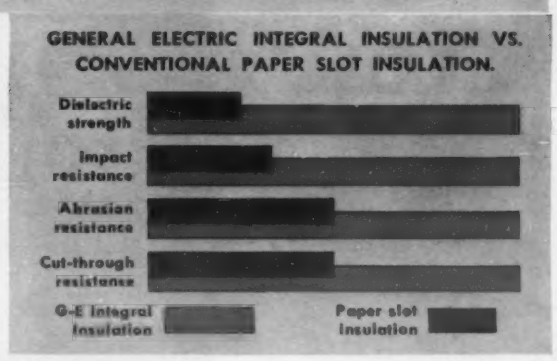
Four-pole, totally enclosed ratings are 1.5 to 16 watts, 60/50 cycles, 115 and 230 volts, single phase.

11-, 21-, AND 33-FRAME MOTORS ALSO AVAILABLE

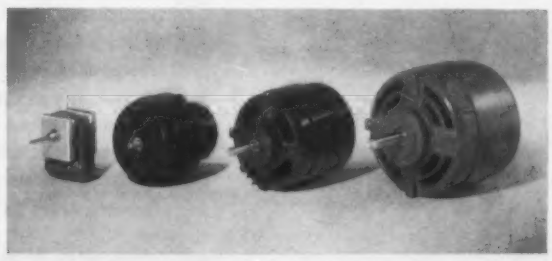
Three other General Electric motor frame sizes are also designed for *heating and refrigeration applications.* The dependable, long-life 11- and 21-frame G-E shaded-pole fan motors give you a wide application range. Four-pole, totally enclosed ratings are: 60 cycles, 115 and 230 volts, single phase, 15 mhp to 1/20 hp (11-frame) and 1/15 to 1/10 hp (21-frame). Both frame sizes have integral insulation system for longer, quieter operation, and new punching design for up to 20 percent greater operating efficiency.

Rounding out the line is the Unitized† 33-frame motor with two-pole, open ratings of 0.75 to 15 watts, 60 cycles, 115 volts, single phase. Ask your General Electric Sales Engineer for more information on these four motors and how they can be applied to your refrigeration or heating products. Or write to Section 727-03, General Electric Company, Schenectady 5, New York.

† Trademark of General Electric Co.



Superior on four important counts—that's the General Electric integral insulation system. Compared to conventional paper slot insulation, integral insulation has: four times the dielectric strength; three times the impact resistance; twice the abrasion resistance; and twice the cut-through resistance. And, unlike paper slot insulation, it is completely impervious to humidity. Integral insulation is standard on General Electric 33-, 51-, 11-, and 21-frame motors.



General Electric's complete line of shaded-pole heating and refrigeration fan motors: (l. to r.) 33-, 51-, 11-, and 21-frame.

Progress Is Our Most Important Product

GENERAL ELECTRIC

Eliminates Need for Gas Pilot

AGA OKs 'Spark-Lite' for Use on Heating Equipment

CHICAGO — A broad new market in the gas heating equipment field reportedly has been opened for the direct automatic spark ignition system—previously restricted to automatic clothes dryers—as a result of recent action by an American Gas Association Laboratories Approval Requirements subcommittee.

Developed by Controls Co. of America's Heating & Air Conditioning Div., the direct ignition system eliminates the gas pilot — "traditionally the only method of igniting the main burner of gas equipment and for years a source of maintenance problems," the company pointed out.

The AGA subcommittee's action makes possible further acceptance of this system for gas-fired comfort heating equipment including unit heaters, duct furnaces, and infrared radiant type heaters.

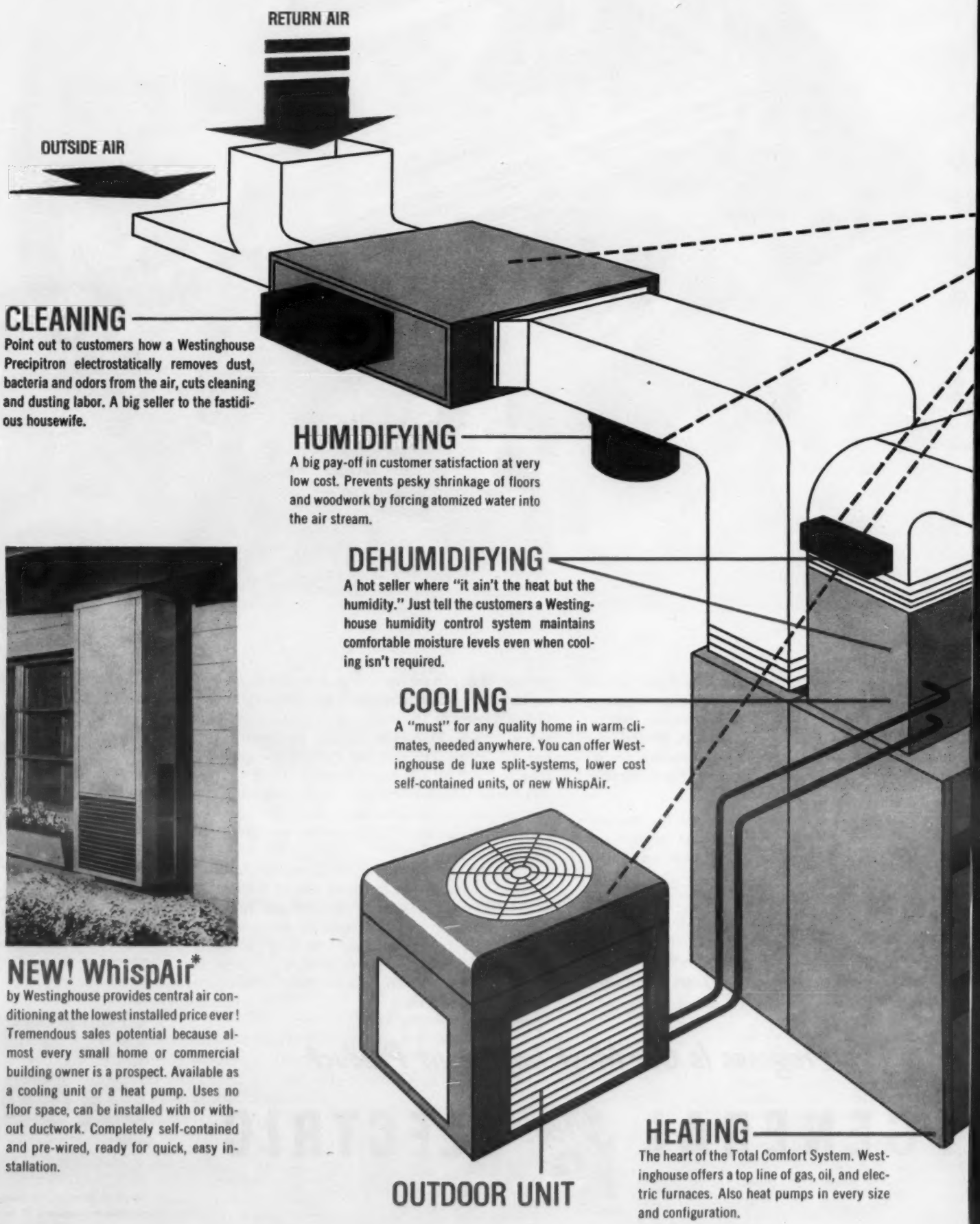
"Unit heaters, duct furnaces, and infrared radiant heaters commonly mounted from the ceiling in stores, plants, or warehouses often require special servicing because conventional pilots in these units occasionaly are blown out or become clogged by foreign material," CCA said.

"In homes without basements, the furnace is usually located in the attic, in the crawl space under the house, or in some other out-of-the-way spot relatively difficult to gain access to for service in event of pilot outage.

"Another growing residential market in the gas heater field is the through-the-wall type vented heater used for trailers and other compact dwellings. The inherent reliability of the direct ignition system is particularly important for this type unit which is designed with a sealed combustion chamber which makes it difficult to service the pilot.

"In addition to home laundry dryers, the direct ignition system also will be marketed late this year on a gas-fired automatic dishwasher. In this application, the system will be used to ignite the main burner gas of the built-in water heater in the dishwasher.

"Simple in design, the 'Spark-Lite' is easily adapted to the appliance by the manufacturer. In operation, an intense electric spark at an electrode mounted adjacent to the main burner ignites the gas. Incorporating all necessary shut-off safety features as protection against possible ignition failure, the system automatically shuts off the gas if the burner does not ignite."



CLEANING
Point out to customers how a Westinghouse Precipitron electrostatically removes dust, bacteria and odors from the air, cuts cleaning and dusting labor. A big seller to the fastidious housewife.

HUMIDIFYING
A big pay-off in customer satisfaction at very low cost. Prevents pesky shrinkage of floors and woodwork by forcing atomized water into the air stream.

DEHUMIDIFYING
A hot seller where "it ain't the heat but the humidity." Just tell the customers a Westinghouse humidity control system maintains comfortable moisture levels even when cooling isn't required.

COOLING
A "must" for any quality home in warm climates, needed anywhere. You can offer Westinghouse de luxe split-systems, lower cost self-contained units, or new WhispAir.

NEW! WhispAir*
by Westinghouse provides central air conditioning at the lowest installed price ever! Tremendous sales potential because almost every small home or commercial building owner is a prospect. Available as a cooling unit or a heat pump. Uses no floor space, can be installed with or without ductwork. Completely self-contained and pre-wired, ready for quick, easy installation.

OUTDOOR UNIT

HEATING
The heart of the Total Comfort System. Westinghouse offers a top line of gas, oil, and electric furnaces. Also heat pumps in every size and configuration.

*Trade Mark

Joint Effort of RACCA and UA

Southern California Apprentice Program To Graduate 28

LOS ANGELES—Marking a fulfillment of a joint management and labor effort to increase the number of trained personnel, 28 apprentices from the southern California refrigeration and air conditioning industry will be graduated Sept. 29 as journeymen refrigeration fitters.

The graduating class, composed of apprentices from the Los Angeles and Orange county areas, will be recognized at a special banquet to be held at the Statler-Hilton hotel here.

Second Largest Group

The apprentices represent the second largest group to complete apprenticeship training in the history of the southern California training program which is conducted by a joint committee composed of members of the Southern California Chapter of the Refrigeration & Air Conditioning Contractors Association (RACCA) and representatives of Refrigeration Fitters, branch local union 250, UA.

Dan MacDonald, apprentice coordinator, UA, and Al Hanson, president of RACCA of Southern California, will present awards. More than 400 guests representing various labor and air conditioning contractor groups from throughout the southern California area area are expected to attend.

As part of the awards ceremonies, refrigeration and air conditioning contracting firms will be recognized for having performed outstanding services in the on-the-job training of apprentices and for their contributions in maintaining high quality of workmanship in the refrigeration and air conditioning industry, according to the announcement.

Entertainment highlight of the evening will be a special performance of the "Great Blackstone," world renowned magician. Archie Virtue, retired general organizer of the UA, will serve as master of ceremonies.

Thermal Co. Opens New Fargo, N. D. Branch

ST. PAUL — Thermal Co., Inc., here has opened a new branch at 1441 Fourth Ave., N., in Fargo, N. D., it was announced by J. Sukalo, executive vice president.

Sukalo also announced that R. E. "Russ" Buhaug has been appointed branch manager. Thermal, an ARW member, now has eight branch locations—in Minnesota, Iowa, Wisconsin, and North and South Dakota, it was pointed out in the wholesaler's announcement.

AUTOMATIC CONTROL

Take advantage of the extra sales appeal of a Westinghouse Total Comfort System. Rather than offering your customers only heating or cooling, sell them TOTAL COMFORT! Sell them year-round controlled air that protects their homes, their health, and their dispositions . . . A Westinghouse Total Comfort System. Call or write: Don Meckstroth, Manager of Marketing, Westinghouse Electric Corp., Air Conditioning Division, Box 510, Staunton, Virginia.

Now-- from a single source, every component in a TOTAL COMFORT SYSTEM

Westinghouse

Perfection Contest Offers 'Free Trip' For Letters on Profitable Operations

CLEVELAND — Following a successful trip to Jamaica last year, Perfection Div., Hupp Corp., is now concluding a successful drive to get wholesalers and dealers to its Mexico-Acapulco Fiesta in early December, the firm reported.

Carl Millsom, vice president for sales of furnaces, air conditioners, and heat pumps at Perfection, recently announced a "Free Trip" contest, closing Sept. 16, 1961, for best letters from dealers describing their profitable operations with those Perfection products.

All letters are to be sent to Perfection's advertising agency, The Jaqua Co., 101 Garden St., Grand Rapids, Mich. Judges include Wilfred A. Petersen, creative director of Jaqua and writer for "This Week" and books on "Living and Selling."

Other judges are Phil Redeker, AIR CONDITIONING, HEATING & REFRIGERATION NEWS; Edwin Scott, Jr., *Heating & Air Conditioning Contractor;* and Bob Jack, *American Artisan.*

"Success of the Perfection-Mexico-Acapulco program is reflected in a 78% increase in participation over last year's trip to Jamaica, where Perfection hosted wholesalers and dealers from every state in the Union," the announcement said.

NEWS readers are invited to write to the editor giving their opinions on any subject of interest to the industry.

G-E Central Air Conditioner Div. Names Sestero

TYLER, Texas — Robert A. Sestero, formerly General Electric Central Air Conditioner's manager of distributor programs, has been named manager of advertising and sales promotion, announces C. B. Ramsdell, marketing manager.

R. A. Sestero

In his new position, Sestero will be responsible for the planning and execution of all advertising, sales planning, and sales promotion programs for G-E central air conditioners, heat pumps, and furnaces. Sestero has been with G-E since 1952.

Dearborn Stove Lets Contract for $1,500,000 Plant, Warehouse, Office

DALLAS — Dearborn Stove Co. has let a $1,500,000 contract for construction of a modern plant, warehouse, and office building which will feature complete air conditioning in both the manufacturing and office areas.

Construction will start immediately, according to Dearborn President R. H. Norris.

Norris said that Dearborn—a national producer of cooling and gas heating equipment—expects the 230,000-sq ft plant to be completed by June, 1962. The Dallas plant will be located in the Garland industrial district on a 30-acre tract.

An official of Benson & Norris, Architects & Engineers, Dallas-based firm for the project, said "the plant will be of the latest design and it has tremendous adaptability for future expansion of office, manufacturing, and warehouse facilities." He explained that the site permits an additional 500,000 sq ft of floor space.

The plant will be constructed of pre-cast, pre-stressed concrete and will have acoustical form-board ceilings and insulated wall panels to absorb sound and keep noise "at an amazingly low level," according to Benson & Norris.

Facilities will include truckage and dock space to handle 20 trucks and six rail cars at once, paved parking for 200 cars, a cafeteria to seat 125 people, two conference rooms, and a large lobby-like show room to display Dearborn's line of gas heaters, sealed-flow units, water heaters, barbecue units, air coolers, and the new Dearborn year-round central heating and air conditioning equipment.

Norris explained that the general offices will be connected to the front of the manufacturing plant by the reception-show room lobby. The manufacturing area, designed for a continuous flow of materials from the raw to the finished stage, will be fronted by a two-story mezzanine-type structure for plant offices.

President Norris noted that in line with Dearborn's growth program, the firm recently acquired full ownership of Sequoia Mfg. Co. in San Carlos, Calif., which makes central heating equipment.

In August

Shreveport Issues 101 Permits for Air Conditioning

SHREVEPORT, La.—During August, the city's Air Conditioning Dept. issued 101 permits with a total equipment and installation cost of $416,508, it was reportedly recently by Hugh Austin, air conditioning inspector.

This compares with 84 permits issued during July with a total equipment and installation cost of $245,031. The August total was broken down as follows:

Residential: year-round air conditioning and heating—29; air conditioning—2; heating—41; replacements—5.

Commercial: year-round air conditioning and heating—16; air conditioning—4; heating—0; replacements—1.

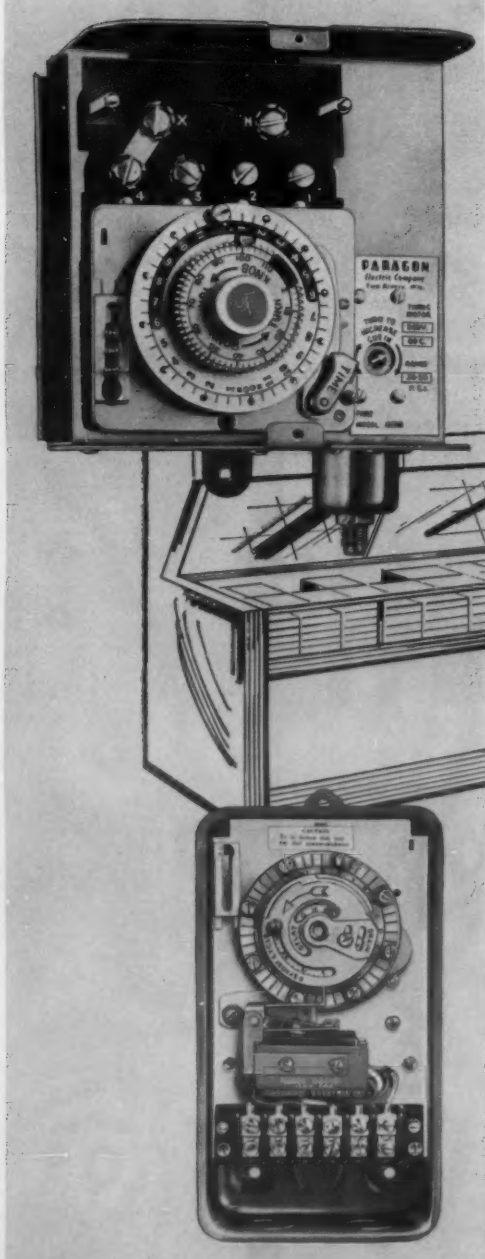
Alterations and/or additions—3. Refrigeration—0.

Largest commercial permit—$140,000—was issued to Shreveport Plumbing Co. to install air conditioning and heating for Centenary College Library. Largest residential permit was issued to Arkansas-Louisiana Gas Co. for a $5,900 air conditioning and heating job.

Inspections and surveys conducted in August totaled 370, compared to 168 in July.

Far more Accuracy * Versatility * Dependability

in commercial defrosting with **PARAGON's...**



8200 SERIES D-FROST-O-MATIC—

designed for use as time-initiated, pressure-terminated defrost control

Ideal for electric heat and compressor shutdown defrosting. Defrosting periods automatically varied . . . frequency from one to six cycles per day.

A precision-built time control and pressure bellows, the 8200 Series is connected to the suction side of the refrigeration system by a copper tube. Length of defrost is not dependent upon a time cycle, but is terminated when the coils are free from frost. *No unnecessary downtime!*

Exclusive 100% adjustable fail safe. Will transfer switch if equipment is not brought back into a refrigeration cycle by an increase in pressure within a specified period of time. Pressure cut-in is adjustable too.

Powered by a heavy-duty, self-starting, 4-watt, industrial-type motor. For complete details on the 8200 Series write for BULLETIN 5949.

600 SERIES TIME DEFROST CONTROL—

designed for defrosting systems which require a timed fan delay or drain period at end of cycle

With the system-tailored 600 Series you can easily change the frequency of defrost and the length of defrost cycle to meet your load requirements. The time control is perfect for defrost systems having water spray, hot gas fan delay, or electric heat fan delay.

It has three adjustable settings — a pre-delay or pump-down cycle, a defrost cycle and a drain or fan delay cycle. Two dials: *bottom dial* controls frequency of defrost according to the time of day; *top dial* controls duration of defrost cycle by the three adjustable settings.

Frequency of defrosting can be set for every 3, 6, 12 or 24 hours.

The unit is powered by a 4-watt, heavy-duty, industrial-type motor. For complete details on the 600 Series write for BULLETIN 5945.

AMF | **PARAGON ELECTRIC CO., INC.**

Subsidiary of American Machine & Foundry Company

1687 TWELFTH STREET • TWO RIVERS, WISCONSIN

TIME IS MONEY... CONTROL IT WITH PARAGON

Bendix-Westinghouse Announces New Milk Cooler Condensing Unit Line

EVANSVILLE, Ind. — A new line of milk cooler condensing units has been announced by the Evansville Div., Bendix-Westinghouse Automotive Air Brake Co.

Donald J. Wood, general sales manager, described the new line as "customized for every milk cooling job."

In each capacity range, ½ through 3 hp, a basic unit is provided consisting of a flat base, motor compressor, electrical accessories, standard receiver, condenser, fan and motor assembly, and base mounted discharge service valve.

Starting with this basic unit the customer can specify as optional, mounting legs for remote installations, pressure control, extra receiver capacity, a full refrigerant charge, solenoid valve, and suction line vibration loop.

The company said 115 and 230-volt, single-phase units are available in the ½ and ¾-hp models. Both single and three-phase models are offered in 1, 1½, 2, and 3-hp. units.

These fully-sealed, hermetic electric condensing units, engineered to perform in accordance with 3A government standards, are produced in both high and medium back pressure models.

"All units are totally engineered and produced to minimum allowable tolerances, using Refrigerant-12," it was stated.

Units are available for both direct expansion and ice bank bulk tank applications.

A special feature of the units is the inclusion of a base mounted discharge service valve between the compressor and the condenser. This valve provides a readily accessible point of compressor disconnect and seal to prevent refrigerant loss in the event service is necessary, it was pointed out.

Customade Products Names F. L. Tupper

CONWAY, Ark. — Frank L. Tupper has been named vice president and general manager of Customade Products Corp. here, a subsidiary of Universal Match Corp.

F. L. Tupper

Tupper, former executive vice president of the Durham Mfg. Co. of Muncie, Ind., also was named a vice president of the Universal Cabinet Div. of the Universal Metal Products Corp. of St. Louis, another Universal Match subsidiary.

Customade produces the Universal Cabinet line of refrigerated commercial display cabinets for the dairy and frozen food industries. It also fabricates restaurant refrigerated food service equipment for the Glasco Corp., another UM subsidiary; and various metal stampings.

Tupper will be headquartered at the Customade plant and will join J. P. Stoltz in directing operations there. Stoltz will continue as Customade vice president and plant manager.

Tupper came to Universal Match last November, after 12 years with the Durham company.

He served Durham as assistant production manager, general sales manager, and for his last two years there, as executive vice president and member of the board of directors.

Since joining Universal Match, Tupper has been with the Universal Cabinet Div. In his new assignments, he will continue to work on cabinet marketing with Elmer Hoefle, vice president and sales manager of the division.

Jet Spray Appoints Carl W. Chenchick

WALTHAM, Mass.—Carl W. Chenchick has been appointed western regional sales-service manager, it was announced by Whitey Crampton, general sales manager of Jet Spray Corp., here, manufacturer of electrically refrigerated beverage dispensers.

Chenchick was most recently associated with Reymer & Brothers, Inc., a division of the H. J. Heinz Co., where he served as district sales manager for the past seven years.

For Your Reprint Copy

"Emergency Diagnosis, Repair of Hermetic Unit Electric Components," by John L. Zant, mail this ad with your name and address to: Air Conditioning, Heating & Refrigeration News, 450 W. Fort, Detroit 26, Mich.

Only 25¢ each.

King-Seeley Thermos Names R. E. Drury

ANN ARBOR, Mich. — Appointment of Robert E. Drury as vice president-administration of King-Seeley Thermos Co. has been announced by President A. N. Gustine.

Drury for the past eight years has been vice president in charge of manufacturing for Redmond Co., Inc., Owosso, Mich., a subsidiary of Controls Co. of America.

Drury succeeds William E. Bandemer, who has retired after a 39-year career with King-Seeley Thermos and its predecessor, King-Seeley Corp. The company's products include "Scotsman" automatic ice machines.

Hill Adds 30 Larger Trailers to Fleet

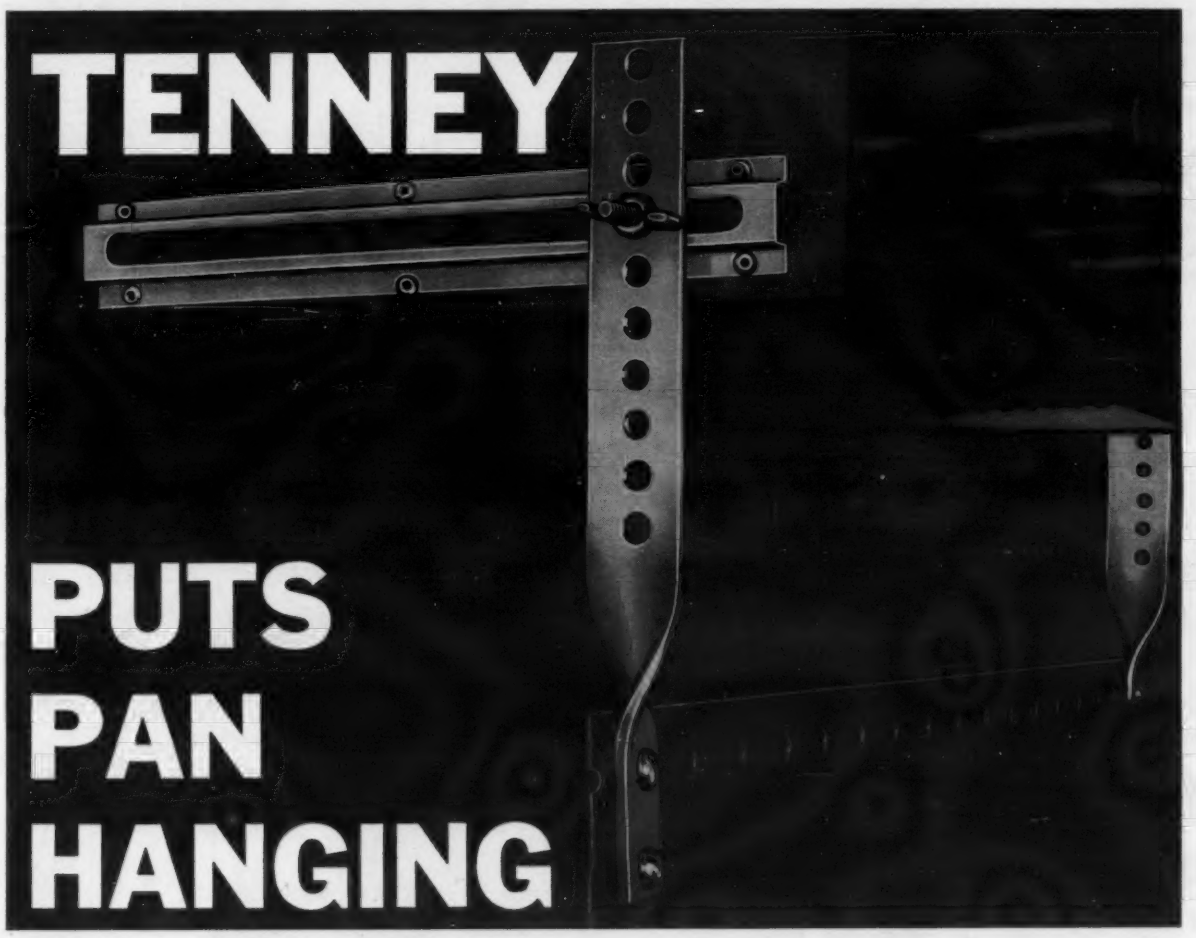
TRENTON, N. J.—C. V. Hill & Co., manufacturer of refrigerated store equipment, has recently added 30 new 38-ft solid wall trailers to its truck fleet.

These new larger capacity trailers can handle up to 12 12-ft display cases in one load. Thus they will improve customer service by reducing the number of truck loads required per store delivery, the company said.

Bally Assigns Oswald To Southern Territory

BALLY, Pa. — Jerry J. Oswald, Nashville, Tenn., has been appointed regional sales manager for the ice cream and dairy industry by Bally Case & Cooler, Inc.

Leon Prince, general sales manager of Bally, said Oswald's territory is comprised of Arkansas, Louisiana, Mississippi, Alabama, and Tennessee, as well as parts of Georgia and Florida. He has been associated with Creamery Package Mfg. Co.



on the RIGHT TRACK!

Trust Tenney's forward-thinking engineers to dream up this time-saving idea for coil and pan installation: a built-in track running horizontally along the side of the coil **plus** perforated, vertical hangers attached to the pan. Thus, you can quickly adjust the distance **between** pan and coil, as well as the pan's position from **left to right** — and lock the installation into place with the turn of a thumb screw!

Tenney coils also provide for end mounted thermostatic expansion valve and a facetized aluminum fin for increased surface, stronger fins and better heat transfer.

Pans may be arranged either right hand, left hand or paired, right in the field. All are made of plastic coated aluminum that is virtually indestructible and easy to clean.

For complete details on all Tenney pans, coils and combinations, write today!

Refrigeration, Heating & Air Conditioning Products Division

Tenney ENGINEERING, INC.

1090 SPRINGFIELD ROAD • UNION, NEW JERSEY

School Air Conditioning

Climate-Controlled Schoolrooms To Get Trial In Atlanta Area

ATLANTA — Climate-controlled schoolrooms will get a trial in the Atlanta metropolitan area with two buildings planned similar to educational facilities in Florida, New Mexico, and Texas.

School officials of Fulton County hope the two structures soon to be under construction will be as economical as conventional buildings and engineers have contended they will be.

One of the buildings will be a 500-pupil high school in the northern section of Fulton County.

This building will have 75% less window space than conventional school buildings for the Atlanta district and officials are hopeful that this will bring about a savings in heating and cooling, along with the fact that they are looking for interior rooms to be buffered from heat and cold by outside rooms.

An elementary school is also to be constructed. It will have 40% less windows, according to the report.

Norman J. Aaron, assistant superintendent in charge of buildings for the county, said both buildings will be equipped with air conditioning at the same cost as conventional school buildings.

Data indicates that during the winter months, outside temperature must drop to 10°F before heat will have to be sent into the high school's inside, windowless rooms.

Fulton County's Board of Education decided to go ahead with climate controlled classrooms as an experiment. If these two buildings prove successful, others will be erected, it is planned.

The two pilot buildings are scheduled to be completed sometime in the fall of 1962.

Architect for the high school is A. Thomas Bradbury & Associates, while the elementary building will have as its architect, Aeck Associates.

Cool Hospital

SALEM, Ill. — The Salem Memorial hospital board has approved installation of air conditioning equipment to serve the entire hospital. Cost will be between $8,000 and $9,000.

Individual units will be placed in all patient rooms on the top two floors as well as in the emergency, X-ray and laboratory departments, and in the dining room on the ground floor. Larger units will be installed in the two wards at either end of the building and in the lobby and in the area of the first-floor nurses' desk.

Gas Air Conditioning For Schools Is Topic Of Sound Slide-Film

NEW YORK CITY — A new sound slide-film showing how gas air conditioning can be used economically and beneficially by schools is now available from the American Gas Association, the AGA announced.

The 15-minute color strip is called "A New Climate For Education." It illustrates how a gas cooling-heating system lends itself to use in modern school design. The filmstrip is designed for sales presentations by gas companies to school boards, civic groups, engineers, and architects.

It was produced jointly by AGA, A. O. Smith Corp., and Carrier Air Conditioning Co. under the sponsorship of AGA's Industrial and Commercial Air Conditioning Committee.

"A New Climate For Education" (Catalog No. 65/C) is available at $19 from the Order and Billing Dept., American Gas Association, 420 Lexington Ave., New York 17, N. Y.

Loyola University Plans To Cool All Buildings

NEW ORLEANS — Loyola university has announced plans to eventually air condition all campus buildings, including a proposed 400-student male dormitory. Contracts for the $1,065,000 first stage of the central air conditioning system were signed recently.

Louisiana Tech Dorms Will Be Cooled

SHREVEPORT, La. — Air conditioning will be a feature of two dormitories to be constructed at Louisiana Tech here.

One will be a four-story residence hall to accommodate a total of 400 men. The other structure will house 200 women students.

Get your copy

Operating Costs of Residential Air Conditioning and What This Means to Dealers and Installers. By R. A. Gonzalez—25¢ each.

Mail this ad with your name and address to: Air Conditioning, Heating & Refrigeration News, 450 W. Fort St., Detroit 26, Mich.

best bet in motors:
across-the-board for all
air-moving applications
...the horses of A. O. Smith
Tipp City Park
BLOWER MOTORS
Sleeper! Cradle-mounted in resilient rubber for extra-quiet, vibration-free operation. Low starting torque prevents belt slippage and starting noise. It's a ball bearing motor that runs as quietly as a sleeve bearing type. Magnetic noises are reduced to an absolute minimum by special machining and assembly processes... air noise is practically eliminated by unique ventilation design. And for the ultimate in space savings, investigate the A. O. Smith Inside-Out permanent split-capacitor blower motor. No switches, relays, pulleys — a proven direct drive motor.

Initial Cost, Space Savings Cited

390-Unit Garden Apartment Project To Be All-Electric, Including Heating

BALTIMORE—Westinghouse Electric Corp. is furnishing electric heating units and appliances for the first major total electric residential project here—a 390-unit garden apartment development.

William H. Loeber, manager of the Westinghouse residential marketing department, said the "Cedonia" apartments, being built on Radecke Avenue by Panitz Bros., will be completed later this year and will consist of one and two-bedroom units.

According to the builders, original plans called for only 10 units to be heated electrically, but public response was so enthusiastic that thermostatically controlled electric baseboard heating now is being installed in all the apartments.

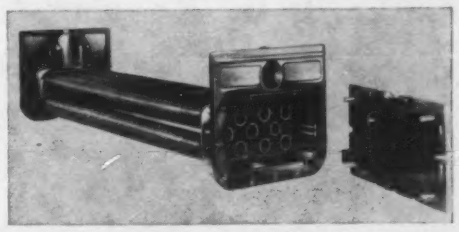
Leon Panitz, president of the Cedonia firm, said baseboard units were selected for two reasons.

"First," he explained, "substantial initial cost savings were made through the elimination of the boiler room, extra piping and heating ducts, and chimneys. Even after the additional insulation was added, the initial cost of installing electric heating was equal approximately to that of a conventional heating system.

"Also, there were significant space savings by using electric heating which enabled us to better utilize existing floor space."

Room units are optional.

Integral-Type Finned Tubing Cuts Size Of Automatic Swimming Pool Heater



KEY CONTRIBUTOR to attainment of maximum efficiency in minimum space in new automatic, heavy-duty swimming pool heater is Wolverine Trufin Type H/R Tube, produced by the Wolverine Tube Div. of Calumet & Hecla, Inc.

NORTH HOLLYWOOD, Calif.—Use of integral type finned tubing enabled Laars Engineers, Inc., here to cut the size of its newly-designed, automatic, heavy-duty swimming pool heater substantially, it has been reported.

In designing its newest unit, the report said, Laars was anxious to obtain maximum performance capacity and equipment durability for required long-life service from components of the smallest possible size.

After exploring various possibilities in their quest to accomplish this dual objective, Laar's engineers chose Wolverine "Trufin," the integral type finned tubing, developed by Wolverine Tube Div. of Calumet & Hecla, Inc., Allen Park, Mich.

Eight years' experience in designing and working with this type tubing for water heaters and boilers had demonstrated that the use of integral fins, to increase surface area, substantially increases the heat transfer efficiency and capacity of tubes, it was pointed out.

The new heater, using Wolverine's Type H/R Trufin and rated at more than 170 boiler horsepower, has an input of 7,125,000 Btu and an output of 5,700,000 Btu. It is only 195 cu ft in size.

Had bare tube been used instead of integrally finned tubing, a unit of the same capacity and horsepower would require 670 cu ft, it was stated.

Because the fins are an integral part of the tube wall, it was stated, "they effectively withstand the shock of vibration, thermal expansions, and pressure changes."

Braemer-Lesser Towers To Have Individual Fan/Coil Units

BEVERLY HILLS, Calif.—What will soon be Beverly Hills' tallest skyscraper (and Drayer-Hanson's biggest local business in unitary air handling equipment since the giant Beverly Hilton hotel job in 1954)—the Braemer-Lesser towers—is fast-rising on the Sunset Strip.

The $4 million, partly-FHA-financed structure will rise 13 stories high. In addition, it will have three subterranean levels.

Project joint architects are John Lindsay & Associates, Santa Monica, and Orr, Strange, Inslee & Senefeld, Los Angeles.

According to project mechanical engineer Steven Burky, heating will be via several hundred Drayer-Hanson individual-room fan/coil units, sized for eventual conversion to year-round cooling.

Howard Helfman Co., and Air Conditioning Supply, both of Los Angeles, are respectively air conditioning contractor and D-H sales representative on this job.

PLAN ACROSS-THE-BOARD — You make your picks from a *complete* line of air conditioning and heating equipment motors—*blower* types . . . *inside-out* design . . . *hermetics* . . . *integrals* in a wide range of hp plus an exceptional range of modifications.

POWER WITH A PEDIGREE — The right combination of features are bred into each A. O. Smith motor type to deliver top performance for its application. Check the paddock below for individual blood lines.

And for the best tips in motors, send for our Tipp City Form. It contains track records on A. O. Smith's complete stable of fractional and integral hp favorites. Or get in touch with your nearby A. O. Smith motor man.

Through research ... a better way

A.O.Smith CORPORATION

ELECTRIC MOTORS

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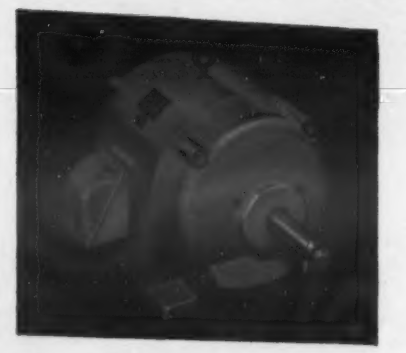


INTEGRALS

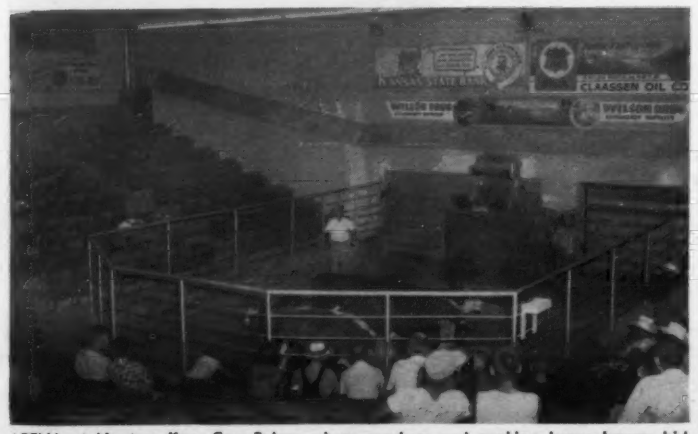
The workhorse of the A. O. Smith line. These open motors provide that extra amount of moisture protection. And you get quiet operation for critical noise areas along with a power reserve that pulls across adverse operating conditions. Rotors are pressure cast in one operation to provide an indestructible construction. Rotor and shaft assembly are dynamically balanced to minimize vibration. On models up through five hp single-phase, the capacitor is mounted inside the motor housing for space-saving installation, maximum protection and streamline appearance.

HERMETICS

A true thoroughbred! Rotor-stator assemblies are designed specifically for sealed compressors . . . quality-built to provide a reliable source of power for refrigeration or air conditioning, year-in and year-out. They're custom-built and dynamically-balanced for years of dependable, quiet, vibrationless service. What's more, each motor is manufactured under the strictest quality control . . . assembled and tested under controlled atmospheric conditions, ever-free of dirt and dust. Application-engineered in single-phase and polyphase, ¾ to 100 hp.

Cattle Auction Barn

Profits by Keeping Customers Cool—And Warm

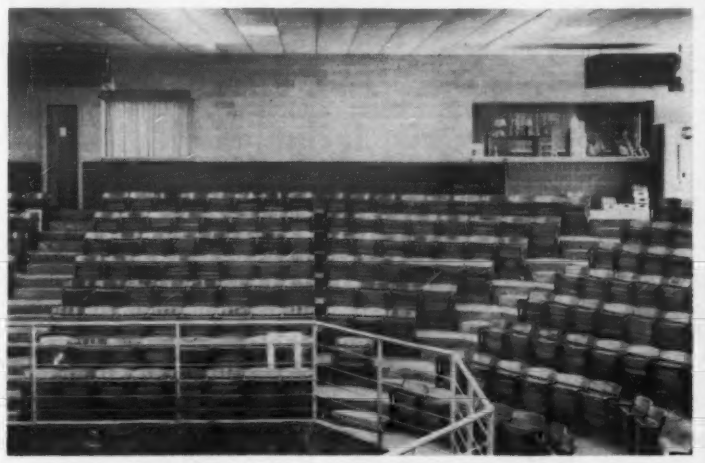


ARENA at Newton, Kan. Cow Palace where ranchers and packing house buyers bid for cattle is heated by two furnaces and a unit heater. One furnace, seen at left, has duct extending to doors where cattle enter and auctioneers stand. It provides spot heating there for attendants.

NEWTON, Kan. — Among ranchers and packing house buyers, the Cow Palace cattle auction barn three miles southwest of here is a popular place.

Unlike hundreds of such barns scattered throughout the country, it is heated and air conditioned for the comfort of its patrons.

In an area where temperatures often soar above 100°F during the summer and fall to -10° or lower in winter, this becomes an important consideration of men who often drive hundreds of miles in air conditioned automobiles to bid on herds they want. They will not go to a hot auction barn too many times during the summer.



ARENA is cooled by four Rheem-aire ceiling-mounted air handlers with condensing units on roof above. Two are seen in this picture. At rear is restaurant, separately cooled by another Rheem-aire.

The Cow Palace, built just two years ago, is not a barn in the true sense of the word. It rather resembles a small arena where an audience of more than 500 prospective buyers comfortably draped over auditorium type seats can view the cattle on the block.

The 8,000-sq ft concrete block building also provides a restaurant, lounge, and rest rooms for its patrons, and office space for the staff.

Cattle sales are held every Tuesday with additional sales held whenever they can be arranged and advertised. The restaurant is open every evening for dinner as well as during the day on auction days. The office is open every day.

To handle such a variety of heating and cooling loads, the building is divided into three zones.

One zone is the arena. This is cooled by four "Rheem-aire" 75,000 Btuh ceiling mounted air handlers connected with air-cooled Rheem-aire condensing units on the roof.

Heating is supplied through a 200,000 Btuh Reznor unit heater and two Rheem furnaces of 160,000 Btuh capacity. The furnaces are installed at opposite ends of the front wall of the arena.

Ducts from each run across the doors where cattle enter and leave and where the auctioneer's stand is located This provides spot heating for the auctioneers and blows warm air across the doorways.

A second zone covers the restaurant, lounge, and rest rooms. Heat for these is provided through a 150,000 Btuh Rheem furnace and cooling through a 75,000 Btuh Rheem-aire with air handler.

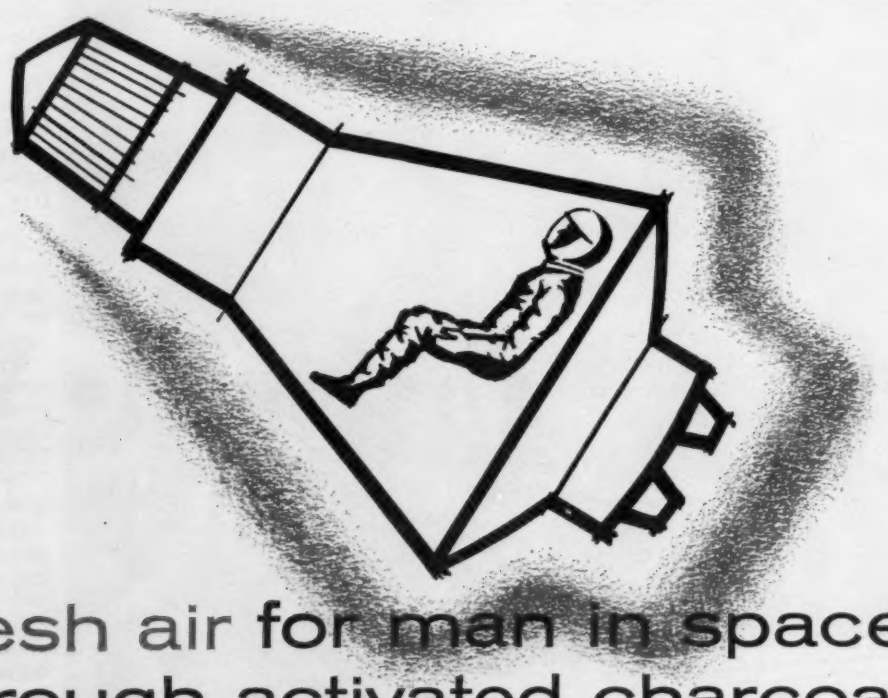
Third zone is the office. It has a 160,000 Btuh Rheem furnace and a 40,000 Btuh cooling coil in the plenum. All condensing units are mounted on the roof.

Mickey Callahan, Rheem Mfg. Co. representative at Wichita, 20 miles to the south, reports that the units have operated satisfactorily during the past two years.

Callahan points out that comfort air conditioning can be important to the success of a cattle auction barn.

"The auction barn works on a commission," he explained. "The operator will travel all over the country inspecting herds and talking to ranchers. He tries to sell ranchers on the idea of selling their stock at his auction because he can get a better price for them."

Thus, Callahan indicated, air conditioning can be a significant factor in attracting larger numbers of bidders and holding them in the arena throughout the sale.



fresh air for man in space through activated charcoal

To blast a Mercury space capsule into orbit around the earth takes power. To keep it there takes air—fresh air to sustain life of the astronaut inside. Ten feet long and little more than six feet wide at the widest point, it contains little room for a man and all the observation and control equipment which must be included. And part of this equipment is a source of air and a means of purifying and reusing it.

The Mercury capsule is hermetically sealed against the vacuum of outer space. It must bring home the air it starts with. Even with no other contamination, just breathing would soon make the air stale. Add natural body odors, odors inherent in equipment and materials built into the capsule, and the lavatory arrangements and you soon have the makings of an unbearable atmosphere.

One of the oldest and most effective methods of solving the problem of air purification is odor adsorption by activated charcoal.

The problem of pure air for our astronauts was solved 45 years ago. Since World War I Barnebey-Cheney activated charcoal filters have become standard equipment in gas masks and on all of our nuclear powered submarines. Odors and contaminants are trapped and held in activated charcoal until released by a reactivation process.

The same principle is being applied to offices, schools, hospitals and a variety of home appliances where fresh, healthful, odor-free air is essential. Barnebey-Cheney builds a complete line of standard and custom air purifiers for any size application from disposable filters for window air conditioners to central system purifiers for Chicago's O'Hare Airport and the huge Dallas Auditorium.

True air conditioning must include air purification. Activated charcoal is the proven practical means of accomplishing it.

To learn more, write for Bulletin T 376 Barnebey-Cheney, Columbus 19, Ohio.

Barnebey Cheney

VIRGINIA Chemicals®

REFRIGERATION BULLETIN

"Helpful facts for the serviceman"

ANSWERS TO COMMON INSULATING PROBLEMS

Labor is a big factor in the operating expense of a service company. Steps that can be taken to reduce it are of real importance. And insulating work can be costly to the service company because of the time it consumes—sometimes out of all proportion to what a reputable service company can charge for it. Here are a few suggestions that can save you time and money.

Keep maintenance men equipped for troubleshooting

Insulating and sealing problems are common, so it makes sense to be sure that your servicemen go out ready to deal with them.

A roll or two of Presstite Insulating Tape and a box each of Permagum Slugs and Cords in the back of the service truck will save gas and time—why return to the shop and pick them up.

Stop pipe drip fast

In refrigeration and air-conditioning installations there are often sections of pipe that drip. Presstite Insulation Tape is the answer. It can be applied quickly and easily by one man. Its inner surface sticks to any dry metal surface, and it never becomes hard or brittle. There are 30 lineal ft. to a roll, and the tape is 2 in. wide. It takes only a few minutes to do the job. Presstite stops cold pipe condensation—may be used on heated lines up to 165°F.

How to seal openings, cracks, etc.

Where BX cable or conduits enter walls or equipment, a special type of sealer is needed. It should be pliable enough so that it can be worked easily into position and it must retain the characteristics that make it serviceable—if it hardens or shrinks, it will loosen, and the job will have to be done over again.

Permagum Slugs—This heavy duty sealing compound is supplied in brown or white, so the serviceman can match or complement the color of the material surrounding the opening to be insulated. It is nonshrinking, odorless, nonstaining, and will not harden with age.

A sealing compound is of particular value in protecting insulation wherever display cases, freezers, coolers, etc., are being installed. Various irregular openings can be sealed quickly and efficiently with this material. It is easily worked—is similar to fresh putty—can be pressed into place with no difficulty. Available in brown slugs of 2 and 50 lb. and in white of 2 and 55 lb.

Permagum Cords—In cords or beaded extrusions, Permagum is a gray-white compound, specially shaped for hard-to-seal openings. It is recommended for sealing work around display cases, glazed openings, windows, console room coolers, etc. Available in rolls of 80 lineal ft. by 3/16 in. diam. and 20 lineal ft. by 3/8 in. diam.

Thermal Mastic—

Ends the need for soldering to get good heat transfer. Just bolt or strap the cooling coil to the plate. Then apply "Virginia" Thermal Mastic, filling the spaces between coil and plate. The advantages over solder are that plates do not distort or buckle, and the coil can be readily dismantled. Thermal Mastic, a compound of synthetic resins, plasticizers and heat conductors, remains permanently pliable. It can be applied by trowel, calk gun, or industrial flow guns in conjunction with 40:1 ratio pumps as recommended by pump manufacturers. It is nonvolatile, will not shrink, is nontoxic, and adheres well to all clean, dry surfaces. Will not corrode copper, will not melt or run at 220°F—or become brittle at —50°F. Flash point: 450°F, minimum. Covers 390 sq. ft. per gallon in ¼-in. diameter bead.

See back page for full line of refrigeration products

FOR TROUBLE-FREE MAINTENANCE USE "VIRGINIA" REFRIGERATION PRODUCTS

"Virginia" Scale & Corrosion Inhibitor

Reduces scale buildup sharply, keeping scale-forming solids in suspension or solution. Less scale, less labor, lower maintenance costs.

"Virginia" Liquid Scale Remover

Ideal for heavy scale. Dissolves 3 lb. of scale per gal. Works fast. Inhibited to prevent metal damage. (Anti-foam agent and test papers included with every container.) Light shatterproof throwaway container for easy handling and easy pouring.

"Virginia" Solid Scale Remover

Highly inhibited—safe for use on galvanized, dipped zinc and aluminum water-cooled equipment. Destroys algal growth. Contains 96% sulfamic acid.

"Virginia" Algae-Cides

Adaptable to the special use requirements in (1) towers, (2) evaps, (3) air washers, and (4) ice machines and drip pans. A new No. 4 high-potency formula kills the tough resistant types of algae.

Du Pont FREON* Refrigerants

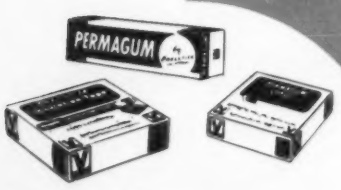
Nonflammable, nontoxic, stable, odorless

Best known for premium quality. Most widely used refrigerants in the industry. "Virginia" is the only national sales agent for Du Pont "Freon". F-11,* F-12,* F-13,* F-22,* F-113* and F-114* are available in cylinders of all popular sizes.

**Du Pont registered trade mark*

"Virginia" Ice Machine Cleaner

Eliminates slow freezing, bad taste and odor. Will not injure enamel or polished metal surfaces. Highly effective on automatic cube or flake ice machines.



Presstite Insulation

Tape—ideal for stopping pipe drip. Adheres to any dry surface. *Permagum slugs*—seals seams, copper tube, BX and conduit entries against moisture. *Cords*—nonstaining, odorless, shaped for use on display cases, freezers, room coolers, etc.

VascoCel Insulation

Preformed of soft, durable, clean, odorless Neoprene. Cuts time and labor costs sharply. Closed-cell structure makes condensation impossible. Ozone, oil, acid, and fungus resistant. Application temperature range 0-220°F. Available in ⅜", ½" and ¾" wall thickness.

"Virginia" Degreasing Solvent

No. 10 has low toxicity, is noncorrosive and fast drying. High flashpoint of 154-160°F reduces fire hazard; dielectric strength 20,000 volts.

Ask about "Virginia" "Freon 11" Cleaning Solvent for motor burnouts.

"Suniso" Refrigeration Oils

G Oils are improved for greater stability and lower waxing point. Available in 3G-150 SSU, 4G-300 SSU, and 5G-500 SSU. Dual Inhibited oils have same low wax point, resist breakdown and copper-plating even more effectively.

Can-O-Gas® Packaged Refrigerants

Throwaway cans—full line in screw-top or clip-top cans. Wide variety of preweighed charges, accurate to ±4 grams. Selection of Freon* gases, sulfur dioxide, and methyl chloride.

Carried by wholesalers everywhere. Order from one nearest you or contact Refrigeration Division, VIRGINIA SMELTING COMPANY, West Norfolk, Va.
Available in Canada and many other countries

"Virginia" is the only national sales agent and authorized repacker for Du Pont's "Freon" Refrigerants.

D77 Form 523

Printed in U.S.A.

See Growth of Trend Toward Individual Heating Units for New Apartments

NEW YORK CITY—At least one out of every four apartments constructed this year will be heated by its own furnace or forced air heating-cooling system, it was reported by Clyde H. Wilkinson, president of the Air Conditioning Div. of American-Standard.

Results of a recent study made by the division indicate that about 75,000 apartments of an estimated 285,000 which will be built in 1961 will be equipped with individual, tenant-controlled warm air systems.

"These findings," said Wilkinson, "show a significant expansion of the furnace market beyond its primary limits of the single-family home."

Garden-Type Apartments Affecting Trend

Important factors in this growth, he said, are the current trend to garden-type apartments, as opposed to high-rise apartments, and the inherent features of the modern forced air system which make it particularly suitable to this type of construction.

Wilkinson said the continuing boom in apartment house construction had prompted the Air Conditioning Div. to make a nationwide survey of gas utilities to determine the impact of this growth on the warm air industry.

Within the last decade, he said, the proportion of housing represented by apartments has more than doubled — jumping from about 10% of total housing to an estimated 22% in 1961.

Survey findings showed that the acceptance of individual heating systems for apartments varied substantially between sections of the country. Penetration is highest in the north central states where about 65% of apartments contain individual systems.

Next is the southern states with a penetration of about 58%. In the northeast only 6% of the apartments have individual systems and the west coast is only slightly better with 9%.

Wilkinson pointed out that these last two areas, where individual unit saturation is low, offer the furnace industry its greatest growth potential. Together, they represent over 66% of total apartment construction in the United States, or about 190,000 apartment units this year.

Table Shows Choice By Geographical Areas

The following table presents survey results indicating for specific areas the percentage of apartment units employing individual warm air furnace systems:

Area	Per Cent
NORTHEAST	
Western Pennsylvania	10%
Hartford, Conn.	2
Philadelphia	75
Greenwich, Conn.	10
NORTH CENTRAL	
Milwaukee	80%
Northern Illinois	63
Central & Southern Indiana	90
West Central Ohio	90
Cincinnati	25
SOUTHERN	
North & South Carolina	40%
Arizona & New Mexico	30
Washington, D. C.	40
West Texas	99
El Paso	50
Arkansas	10
Columbus, Ga.	99
Oklahoma City	75
Mississippi	95
Georgia	90
WEST	
Arizona	50%
Northern & Central Calif.	10
San Diego	20

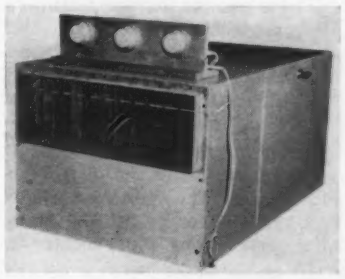
Commenting on company efforts to develop this market, Wilkinson said that the Air Conditioning Div. was actively promoting individual apartment systems in all market areas with the most significant results to date achieved in eastern seaboard cities.

Electric Furnace Said To Provide Zoned Heat for Small Structures

OAK PARK, Ill.—A new electric furnace said to provide completely zoned heat for residential and commercial structures was shown at a private preview here to utility, manufacturer, wholesaler, and other industry representatives.

The compact horizontal unit shown comprised a heat exchanger having 12 passes, each of which contained two electric heating elements. Air for the 12 passes was supplied by a single blower, and equal distribution through the passes was obtained by a restrictive baffle.

"A low voltage control system enables the installer to select the proper number of electric elements to provide the correct amount of heat for each zone and control the selected number with a thermostat in each zone," it was stated.



Electro-Zone Furnace.

"The 24-in. by 8-in. outlet is divided into the 12 passes, each 2 in. wide to accommodate standard ductwork, which is available in increments of 2-in. widths.

"For example, one might have a 6-in. by 8-in. duct which would span three passes of the furnace connected to one zone and operate only four or five or six of the elements according to the heating need of that zone."

Installation economy is said to be assured "because line voltage power leads are brought to a single location at the furnace and low pressure wiring is run to each thermostat. No balancing dampers are required, and balancing is eliminated by utilizing a thermostat in each zone. Wind shift (infiltration) and sun effect (free heat gain) are automatically compensated for.

"A large capacity quiet blower, combined with a fully insulated sound dampening casing, assures a quiet operating installation."

Marketing plans are incomplete, but additional information may be obtained by writing: Electro-Zone Co., 316 E. Silver Spring Dr., Suite 237, Milwaukee 17, Wis.

ABOVE ALL

THE SPORLAN

Catch-All

with the Original Molded Porous Core

Introduced fifteen years ago...

Now the most widely acclaimed Filter-Drier!

Read this Original Sporlan Catch-All ad... published way back in January, 1947. Long before anyone else even thought of a molded porous core. A core that couldn't powder or pack, or let the refrigerant channel or by pass it. No one except Sporlan thought of filtering the refrigerant instead of straining it.

Sporlan developed the now famous Catch-All filter-drier to meet the need of eliminating such problems as moisture, acid, sludge and other foreign matter in a refrigeration system. Today, through constant engineering research, its molded porous core is universally accepted as the foremost drying, acid removing and filtering agent for *all* air conditioning and refrigeration systems.

Only Sporlan offers you fifteen years of experience in the application of molded porous core filter-drier units.

Only Sporlan gives double activation... before and after assembly. Immediately after the final activation the unit is sealed with moisture-tamper proof seals.

the most complete line of filter-driers in the industry

There's a Catch-All for every capacity from fractional horse power units to large capacity installations...

so, remember... *if you want perfectly clean, perfectly dry refrigeration and air conditioning systems... buy Sporlan Catch-Alls, the Perfect Filter-Drier since 1947.*

SPORLAN VALVE COMPANY

7525 SUSSEX AVENUE ST. LOUIS 17, MISSOURI

EXPORT DEPT., 85 BROAD ST., NEW YORK 4, N.Y.

Inside Dope

By GEORGE F. TAUBENECK

(Continued from Page 1)

tage of the employed older worker, in some cases it has provided an obstacle to the utilization of older men," Cushman observes.

Rising concern over the needs of the older men should be a matter of self-interest to workers at every age level. A senior citizen does not live in a world apart, nor does he desire to do so, and his basic problems are best met by meeting the basic problems of society generally.

"In my opinion the greatest need of the older worker is to be more fully integrated into economic and community life. More than most, he has a fear of not being wanted or needed. More than most, he has a fear of change. More than most, he is sensitive to rebuffs and frustrations in his search for recognition and security.

"Although economic security is of basic importance, he cannot be a happy person without proper adjustment to his total world.

"Any program designed to be helpful to him either during his working years or after retirement must, therefore, contribute to his self-respect, his status in society, and enable him to continue as a useful person in his home and community," Cushman observes.

In a full employment economy the mature worker will be able to make a maximum contribution, and derive maximum personal satisfactions. Outlook for employment of these useful people now appears to be encouraging because of two major factors:

The economic outlook is good, indicating that the number of jobs that will have to be filled over the next 15 years will continue to rise.

We can expect the creation of 10 million additional jobs in the next eight years, with about five million going to men in their fifties.

On the question of retirement, Cushman asserts that much more study must be given to the merits of compulsory versus flexible retirement programs before there can be definite conclusions.

"Compulsory retirement has many advantages to the employe. It encourages definite planning and it carries no stigma. Flexible retirement, on the other hand, permits a fairer allowance for individual differences in health, aging, and other factors."

Hi-ya, White Collars

Realizing that white-collar, salaried employes will continue to outnumber blue-collar, wage-earning production workers as the atomic age develops, industrial management is stepping up its efforts to make sure that white-collar morale and job satisfaction are keeping pace with the continuing numerical growth of this group.

National Association of Manufacturers has issued a pamphlet entitled "Satisfying Salaried Employes," which it describes as a practical manual for building better relations with all categories of white-collar people.

These groups include technical and professional, clerical and stenographic, supervisory and administrative, engineering and scientific, sales and research, and staff personnel.

Four areas hold answers to job satisfaction in the office and laboratory. They are status and recognition, compensation, communication, and supervision.

If management is to secure the full and voluntary cooperation of its salaried people—in terms of skill, effort, and performance — its relations with office personnel must be based on fair dealing and recognition of the *individual*, and his desire for responsibility and a feeling of personal worth.

"Important and continuing management attention must be applied to the task of uncovering, understanding, and correcting causes of dissatisfaction in these areas," the report emphasizes.

Employes generally have certain basic needs, such as "recognition," and a "feeling of belonging, accomplishment, and security."

Automation to the Rescue!

Future labor shortages in this country will be offset by the increased use of automation, according to W. C. Allen, director of manufacturing planning for Westinghouse.

He urges utilities to prepare for the terrific power demands which will be required by automated plants of the future.

Pointing out that population of the United States probably will double in the next 50 years, Mr. Allen forecasts that power demands will increase eight times during the same period.

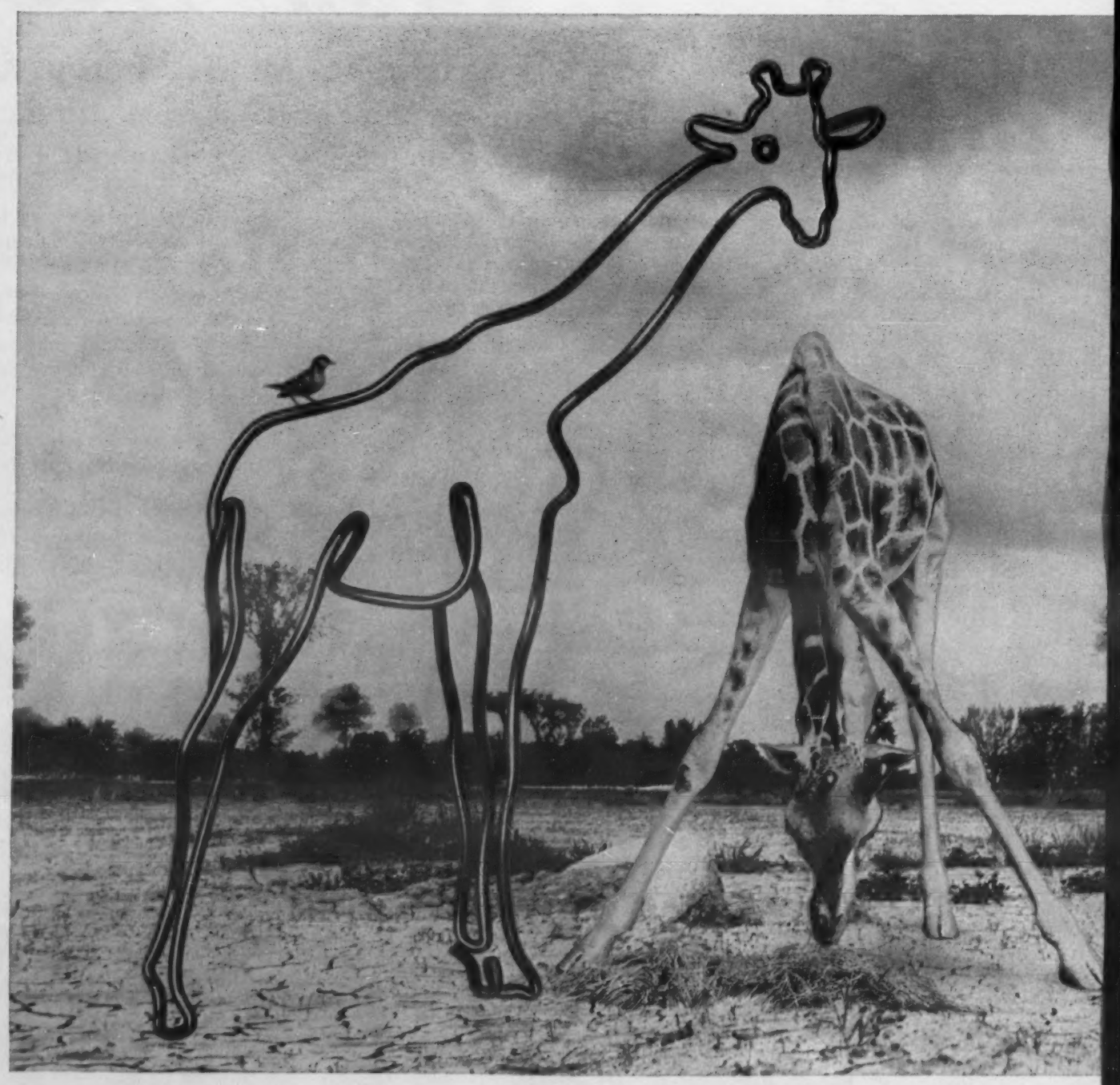
"The only solution to the problem is automation, which will permit each man in the work force to increase his rate of productivity . . . by utilizing electric power driving automated equipment."

Emphasizing that there need be no fear of labor displacement because of expanded automation, the executive adds:

Fears Debunked

"Let me debunk any labor displacement fears. We face a shortage of labor and must furnish machines to meet this shortage. The tremendous increase in population which we

Bundy can mass-fabricate practically anything



will experience in the next 50 years will be, unfortunately, in the age groups outside the labor force."

Impact of automation on the wage earner will upgrade his skills and make his job physically easier. Automation also will increase requirements for better educated and more highly skilled operators.

Already automation has brought about many changes in industry's approach to product planning and product design. Every product now must be evaluated in terms of its adaptability to automated assembly lines techniques.

We Are One-Third Socialized Already

Our nation is about one-third socialized. How's that again? Well, nearly a third of our national income is channeled through government in the shape of taxes, declares Dr. Emerson P. Schmidt, director of economic research for the U.S. Chamber of Commerce.

"If the government sector continues to grow, as it has since 1929, in 50 years 99% of our economy will be socialized, and only one person out of one hundred will be privately employed," Dr. Schmidt impresses.

Perhaps no one expects this trend to continue, to that degree of absurdity, but there is nothing in sight at the moment which is stopping it.

While our central government continues to take on new activities and functions, it presses harder on the tax resources of state and local governments.

Schmidt insists that unless citizens recapture control of the public purse, our free economy is doomed.

Stories of the Week

"Please ask your mother to phone me when she returns. She can call me at Capitol 6-555."

At the other end of the phone a little girl breathed hard, but didn't reply for a moment. Finally:

"I have the numbers, but how do you make a capital six?"

Your children are growing up when they ask questions you can answer.

When women kiss, it always reminds one of prize fighters shaking hands.

The way of the transgressor may be hard—but it isn't lonely.

Ever hear of the Sultan who left a call for seven in the morning?

And then there was the fellow who made a fortune by gathering momentum and stuffing it into little paper bags.

Safety engineers know what to do about the back-seat driver.

Give her a belt.

Fact that he prefers blondes doesn't prove that a man is a gentleman.

There are more men than women in mental hospitals, which just goes to show who's driving whom crazy.

Events were so uneventful at the 13th Precinct Police Station that plainclothesmen were playing cribbage with harness bulls.

"Why doesn't something happen?" shuxed their Captain. "Dull like, this."

"Don't worry, boss," reassured an Old Timer on the force. "Pretty soon there'll be hell-to-pay. Murders . . . robberies . . . just put your trust in Human Nature."

Quote of the Week

It is not enough merely to talk to one another and listen to one another. We must live together in that fellowship of love where there are no condemnations, no suspicions, no rivalry but a life of peace, joy and love.—*Ecumenical Review.*

A sarong is a simple garment carrying the implicit promise that it will not long stay in place.—E. B. WHITE.

Economic independence does not set anyone free. Or it shouldn't, for the higher up you go, the more responsibilities become yours.—BERNARD F. GIMBEL.

Teaching is leaving a vestige of oneself in the development of another. If you have ever seen the light of understanding shine in another's eyes where no light shone before; if you have ever guided the unsteady and unpracticed hand and watched it suddenly grow firm and purposeful; if you have ever watched a young mind begin to soar to new heights and have sensed that you are participating in this unfolding of the intellect, then you have felt within you the sense of being a humble instrument in the furtherance of mankind.—*Wisdom.*

Philosophy of the Week

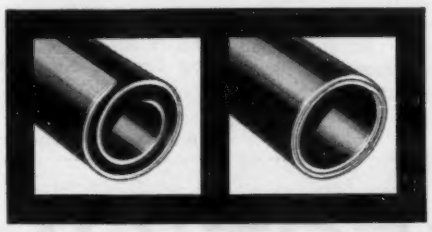
"Everything great in the world comes from neurotics. They alone have founded our religions and composed our masterpieces . . . We enjoy lovely music, beautiful paintings, a thousand intellectual delicacies, but we have no idea of their cost, to those who invented them in sleepless nights. . . ."—MARCEL PROUST.

NEWS readers are invited to write to the editor giving their opinions on any subject of interest to the industry.

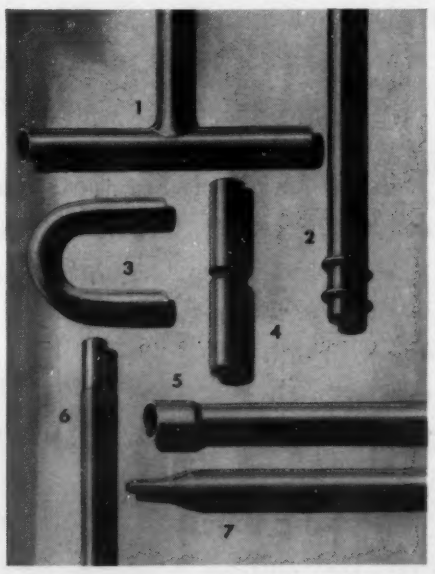
No matter how you need your tubing . . . as straight lengths, simple bends or complex coils, in orders of several hundred or several million . . . Bundy can supply it. And no wonder: There are very few things you can't do with Bundyweld® steel tubing. Standard wall thickness and O.D. are held to +.002″ to −.003″ and it meets Government Specification MIL-T-3520, Type III, and ASTM 254. With the special machines developed by our engineers, Bundy gives you every possible mass-fabrication cost advantage. Get the complete story on your tubing needs from Bundy before you buy. Call, write, or wire: Bundy Tubing Company, Detroit 14, Michigan.

BUNDY TUBING COMPANY • DETROIT 14, MICH. • WINCHESTER, KY. • HOMETOWN, PA.

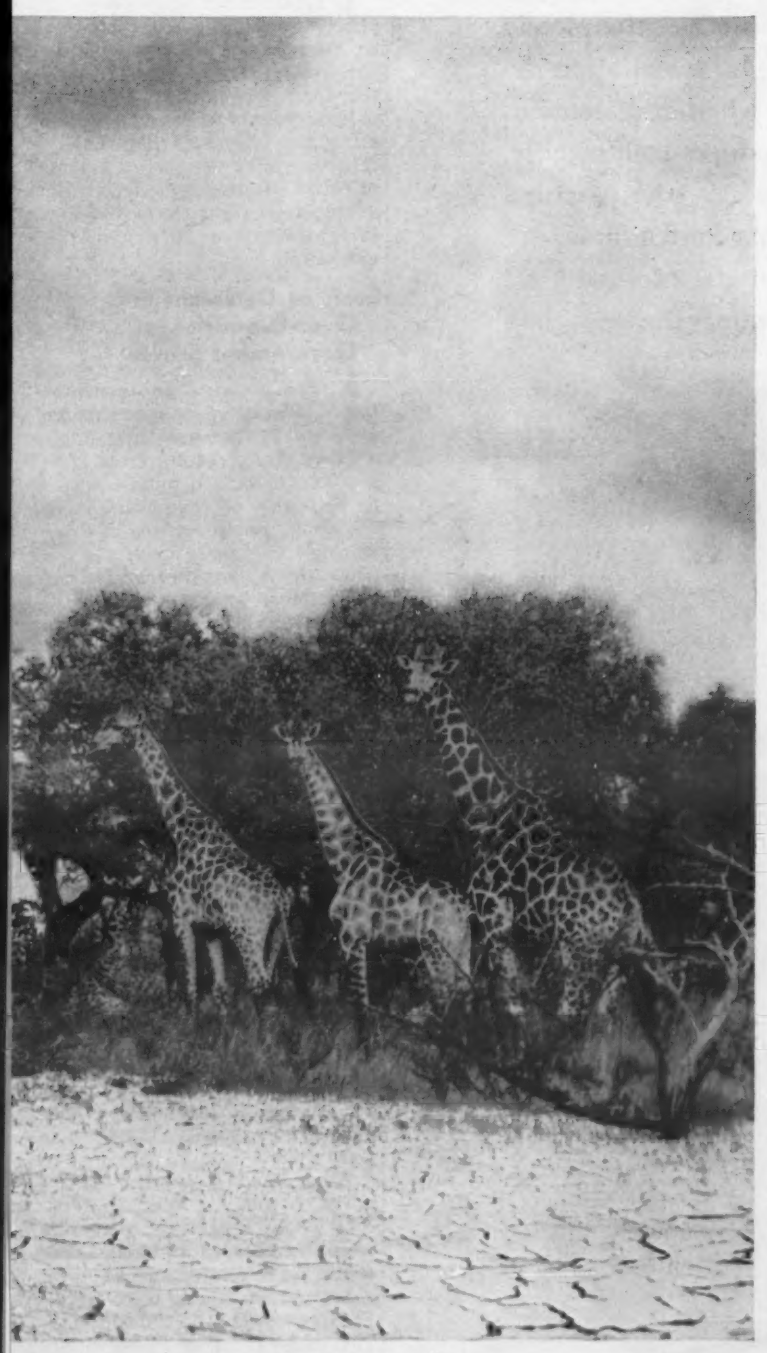
World's largest producer of refrigeration tubing. Affiliated plants in Australia, Brazil, England, France, Germany, Italy, Japan.



Bundyweld, double-walled from a single copper-plated steel strip, is metallurgically bonded through 360° of wall contact. It is lightweight and easily fabricated . . . has remarkably high bursting and fatigue strengths. Sizes available up to ⅝″ O.D.



Small-diameter tubing components mass-fabricated by Bundy may be the answer to your design problem. The Bundyweld tubing shown above is: (1) saddled and soldered, (2) double-beaded, (3) bent to minimum radius, (4) grooved, (5) expanded, (6) precision-ground, (7) swaged.



BUNDYWELD® TUBING

Region 10 Wholesalers To Meet In Cooperstown Sept. 22-23

COOPERSTOWN, N. Y.—Second annual fall meeting of the Air Conditioning & Refrigeration Wholesalers Region 10 will be held at the Otesago hotel here Sept. 22 and 23, Leon C. Lust, meeting chairman, has announced.

Edward C. Anzur of du Pont will address the Friday morning session on "Measurements of Wholesaler's Performance."

On Saturday morning, Donald S. Frey, legal counsel for the Wholesale Stationers Association, will lead a seminar on "Guides in Free and Fair Competition."

Active in the morning business meetings will be E. Peter Sorensen, president of ARW, and Thom Muir, executive vice president of the organization.

The Friday morning session, chaired by Frank Meier of Meier Supply, Binghamton, will be the Region 10 annual meeting. The Saturday session will be a joint manufacturers-wholesalers meeting.

Social features include golf tournament, fishing contest, boat ride on Lake Otsego, manufacturers' cocktail party on Friday night, and cocktail party, banquet, and dancing Saturday night.

Registration fee is $10 per person. Manufacturers are jointly sponsoring their cocktail party by contributing $10 per company.

Advance registration can be made with Douglas Marshall, R. D. Marshall & Co., Inc., Albany 1, N. Y.

The Consulting Engineer and Gov't Jobs

7 Advantages of Employing Private Consultants for Federal, State Projects Cited by CEC President

WASHINGTON, D. C.—Seven advantages available to Federal and state governments through the employment of private consulting engineers to do much of its engineering work were cited recently by Harold P. King, president of the Consulting Engineers Council.

He addressed his remarks to the House Armed Services subcommittee on special investigations, looking into the "contracting out" procedures of the military branches.

King is a partner in the consulting firm of King, Benioff & Associates, Sherman Oaks, Calif.

The advantages to the government, and therefore to the taxpayer, cited by King are:

1. Affirmation of the principle of private enterprise.
2. Greater national security.
3. Opportunities for selecting specialists.
4. Greater alertness through effective prosecution of the work.
5. A deterrent to over-expansion of governmental staffs.
6. True and complete records of engineering costs.
7. Economy.

In Support of Claims

In support of these advantages, he noted:

1. Eliminating the use of private consulting engineers by government agencies would lead to "the complete destruction of an important segment of the private enterprise system. When government competes with private business, it foreshadows the eventual denial of the right of its citizens to engage in business."

2. The use of private practicing engineers can provide a very important reservoir of engineering talent. The armed forces can become acquainted with the particular qualifications of various firms and thereby have ready an engineering force to call upon at a time of major emergency.

3. Consulting engineers in private practice can be selected whose qualifications are particularly suited to that required for a specific project. Private engineering firms can stay in business only if they are receptive to new ideas and more economical methods of providing quality service. This competitive challenge does not exist in many government engineering staffs.

4. Consulting engineers in private practice are accustomed to executing work under pressure and thereby comply with the time schedules as specified in contracts. Government staffs often have projects delayed by other projects assigned a higher priority. Retaining consulting engineers reduces the possibility of unwarranted delay to the minimum.

Seen as Deterrent to Over-Expansion of Government Staffs

5. The growing and continuing tendency for government agencies to increase their engineering staffs results from sudden expansions to handle specific problems or temporary peak demands. Judicious use of consulting engineers will be a deterrent to over-expansion of government staffs.

6. "We know the cost of our services is less, but we find ourselves at a great disadvantage to prove it conclusively because of the unrealistic accounting system of our government. We believe that (this system) should be revised so that it will be a fully reliable basis for examining costs of engineering work performed by government staffs."

7. "It is the council's contention that definite economies can be realized in the engineering design of government projects by consulting engineers. Particularly those where it is deemed necessary to suddenly augment government staffs to care for increased work loads occasioned by emergency programs of unusual nature or size."

King cited a number of reports to indicate that on projects where consulting engineers were employed, engineering costs, as a percentage of total construction costs, were significantly lower than when only government engineers were employed.

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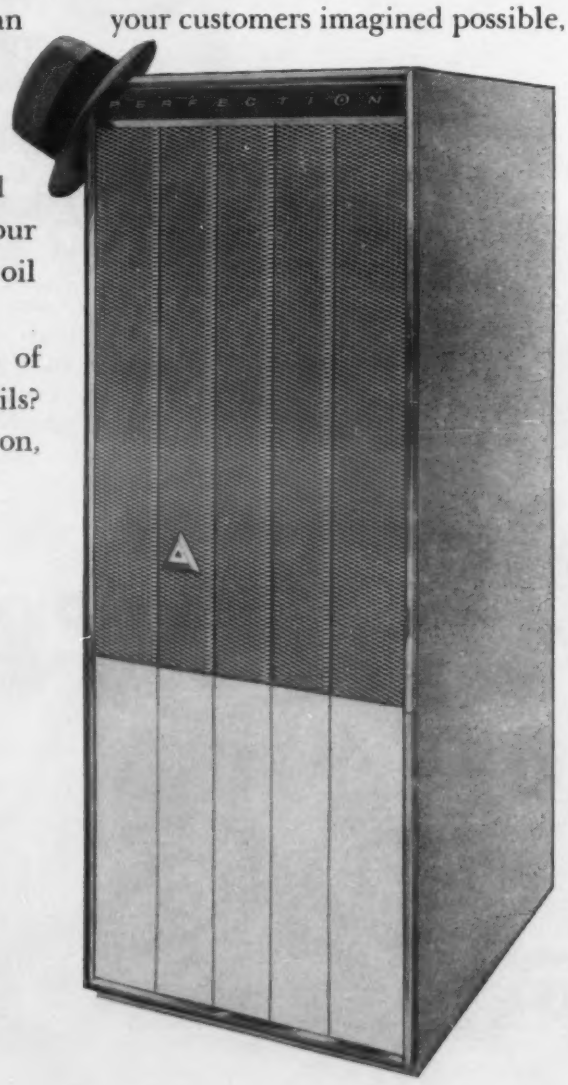

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PERFECTION

Rochester Urban Renewal Possible Because of Cooling

ROCHESTER, N. Y. — A unique approach to urban redevelopment, made possible by air conditioning, is proceeding on schedule here.

The Rochester plan differs from most downtown renewal projects in two respects: (1) it is primarily a private enterprise, privately owned and financed, and, (2) it is a combination of new and existing structures essentially under one roof.

Refrigeration equipment for Midtown Plaza was recently hoisted into place on the third floor of Midtown Tower, an 18-story combination office building and hotel which will be the hub of the 10-acre, $40 million renewal project. The equipment consisted of three steam-powered water chilling machines with a combined cooling capacity of 2,100 tons.

"Without air conditioning, this approach to urban redevelopment could not be undertaken," said Russell Gray, president of Carrier Air Conditioning Co. which built the equipment.

MORE THAN 50 STORES

By eliminating some streets, razing some buildings and connecting existing structures to the new constructions, architect Victor Gruen has designed a completely enclosed, compact shopping and business center in which more than 50 shops, restaurants, and other enterprises will be easily accessible from an air conditioned two-story pedestrian mall located at the base of Midtown Tower.

The Quackenbush Co. of Buffalo, mechanical contractor for the center, is now installing the refrigeration equipment which was hoisted into place by the Sam Gottry Carting Co.

When completed, in 1962, Midtown Plaza will provide nearly 1,000,000 sq ft of retail space and 180,000 sq ft of office space.

The project is being financed by two existing department stores in the Plaza, McCurdy's, and Forman's, which already have their own cooling systems. The heating and cooling for smaller stores will be provided from the central plant.

The City of Rochester is building and will operate an $8 million parking garage for 2,000 cars underneath the Plaza.

Air Conditioning at the Summit

Hotel Guest Rooms Include Combination Bar and Refrigerator

NEW YORK CITY—All of the 800 guest rooms in the recently opened Summit hotel here, first new hotel to be built in the city in 30 years, are air conditioned with Fedders "Fedair" cabinet-type air conditioners using chilled and hot water.

The Fedair system consists basically of a coil of finned copper tubing through which either chilled or hot water is circulated. A blower system takes the air first through a filter and circulates it through the room. Blower operation is designed for operation at minimum noise levels.

Each unit has an individual thermostat and low, medium, and high speed fan control buttons to suit personal preferences. The styled Fedair cabinet, recessed in the wall, is designed to fit in with the Summit's custom-styled furniture and fashionable decor.

Among other features offered by the Summit is a combination bar and refrigerator in the guest rooms.

TYPICAL GUEST ROOM includes year-round central air conditioning with Fedair fan coil units.

A FEDAIR UNIT is located in each of the Summit's 800 guest rooms. Shown above is the dining alcove of a three-room suite which rents for $105 per day.

CAN A SINGLE MOISTURE INDICATING ELEMENT ACCURATELY SIGNAL DANGER IN BOTH REFRIGERANT 12 AND REFRIGERANT 22?

Of course it can't! And yet 4 out of the 5 manufacturers of moisture indicators have asked the refrigeration industry to accept the fact that one element can do the job...against all the rules of common sense and all the evidence of science. R-12 and R-22 have radically different characteristics and there's a big difference in how much moisture each refrigerant can stand before serious trouble develops in the system. Ansul's 200 "Dry-Eye" moisture indicators are the only ones that employ two separate indicating elements—one for R-12, one for R-22. The L-200 can be installed alone or with the new Ansul "System Boss" drier .... the T-200 is designed for use with the unique Ansul "T-Flo" drier to create another complete moisture control system. Want scientific proof of what really happens when a single R-12 element is called upon to signal trouble in an R-22 system? Write and we'll send a research bulletin...or ask your refrigeration wholesaler. ANSUL CHEMICAL COMPANY, MARINETTE, WIS.

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Editorials

Taxation By Administrative Fiat

The Administration in Washington has gone to some lengths to promote to the citizenry the need for increased taxation to meet the demands for increased Defense spending—at least that is the Administration's excuse.

To many, the need for increased Defense spending is questionable. But whether it is or not, the laws of this country firmly state that the power to levy Federal taxes resides in the Congress only. More and more, however, there seems to have been permitted the levying of taxes through a process which one keen student of Federal taxation labels "administration fiat."

What this means is that an agency of the Federal administrative branch, namely the Bureau of Internal Revenue, will levy a tax through interpretation. This can happen even when such an interpretation is quite obviously contrary to the will of the Congress and contrary to all precedent.

The air conditioning industry is currently threatened by such an action. The Tax Ruling Division of the IRS has notified a manufacturer, on whose equipment a test ruling was to be made, that the 10% air conditioner excise tax would apply to a central type self-contained air conditioning unit, even though in probably more than 90% of the installations the unit will be hooked up to ductwork, a fact which even IRS officials have agreed would take it out of the category of equipment meant to be taxed.

But on the legal technicality that such units are "suitable for direct delivery of air" all such self-contained air conditioning units will be taxed, if the new ruling goes into effect.

Moreover, the interpretation, if issued in the form indicated as likely, will make the imposition of the tax on such units retroactive to Dec. 1, 1959. This in spite of the fact that the IRS has had all of the facts and material that it needed on which to base a ruling since December, 1959, but had given no indication at all until quite recently that it would rule to tax the larger units.

There would seem to be an obvious inference in this strikingly unjust proposed action of an order from on high to "squeeze the blood out of every last turnip" currently in levying and collecting taxes. We think there is every right on the part of the citizens who feel they are being unjustly burdened with a tax that Congress never intended to levy to protest such administrative orders.

Write your U. S. Representative in Congress today, and let him know how you feel about this. And you might ask him, in passing, if he is willing to abdicate all of his powers to the executive branch of the government.

Ten years ago, the industry rallied to fight successfully an attempt to tax certain components of cooling equipment. The issue this time is even more significant.

Air Conditioned Shoppers Linger Longer—Buy More

SMALL RETAILERS have been, in the aggregate, one of the air conditioning industry's biggest customers. Managers of independent specialized shops usually are quick to understandard that air conditioning attracts customers who linger longer and buy more.

In contrast, of the 5,000 plus department stores reported in the last government census as having annual sales of over $100,000, fewer than 41% are air conditioned.

What's more: many of these department store air conditioning installations were designed to give only partial service—because they are limited to a few floors of the total building.

Thus it can be prophesied that the contractor who really tries to sell air conditioning equipment to diversified big stores can hope for great progress in the years ahead.

One enormous amalgamation of America's chain department stores plans to spend at least $1 billion for modernization during the next three years, it is reported. A projected $280 million of these aggregate appropriations is earmarked for air conditioning, we hear.

Smaller chains will follow suit, you can expect. The latter well may provide an even larger total market for air conditioning than do the metropolitan giants.

Competition eventually will force ALL retail outlets to air condition their shops—and every floor of their emporiums—lest they lose customers to their more progressive brothers on the other side of the street.

Variety stores represent another huge potential market, inasmuch as they possess the lowest percentage of air conditioning in the retail field. Some 40% of the stores in this category probably will install air conditioning units in the immediate future, it is predicted by marketing analysts.

Here are a few salient facts which every air conditioning contractor and dealer should note well:

All new supermarkets include air conditioning in their plans.

Fewer than 26% of the nation's beauty parlors are air conditioned.

The florist trade is a neglected market with rich potentialities.

Replacements will account for many sales in all these retail fields, too, because much present equipment is worn out or outmoded.

Wherever stores or offices expanded in size, larger or additional equipment will be required to supply ample coolpower to do the job.

So, you can say this again and again:

Every local retail store, professional office, hotel, apartment building, etc., will continue to comprise a tremendous market for commercial "package" air conditioning (and central systems) for many years to come.

In sum: the air conditioning contractor who cultivates commercial business should be off to the races with a winning bet on every three-horse parlay in his city or town.

OVER THERE, OVER THERE

Tyler Refrigeration
International
Niles, Mich.

Editor:

Tyler Refrigeration International, D. A. is going ahead with its plans for new overseas markets.

Les Hickox has been working and assisting Frigrite Limited in Port Melbourne, Australia (a Tyler Licensee) for the past six months, and sales have been steadily increasing. Mr. Hickox will leave Australia on Aug. 8 to inspect our facilities in West Germany and France. En route he will visit Tyler Distributors in Japan, Hong Kong, Singapore, and Bangkok.

Sven Swanson, Technical Director and A. J. Perez, Vice-President, of Tyler Refrigeration International, C. A. will depart shortly on an extensive trip to investigate and explore the possibilities of licenseeing and sales arrangements in Argentina, Venezuela, Chile, and Mexico.

We feel our biggest future sales increases in the next three years will come from our overseas markets.

SAM WEST,
Sales Manager

PITFALLS OR PLATITUDES

Editor:

For a number of years I have been thinking that the Foundation for Economic Education was performing a net disservice to free enterprise by encouraging the worst practices of private ownership and business in the name of the Constitution, rugged individualism, or some other catch phrase.

You are to be congratulated for your editorial, "Capitalism Had Better Find Better Spokesmen," in your Aug. 21 issue. It was courageous to publish it, and your readers will profit from having been alerted to the pitfalls of the cliches and platitudes of so-called "intellectual conservatives."

HORACE BARKS

'SUPERIOR WRITING' GUARANTEES ENTHUSIASM

Ohio Power Co.
Canton, Ohio

Editor:

I would like to tell you how much we appreciate the article you published in your Aug. 21 issue, on our electric heat program.

I would like also to congratulate you on the superior job you did in writing the article. It certainly tells the details of this activity in a particularly fine manner.

You will be interested in knowing I have received several phone calls from different companies, other than those participating, who have read your article.

Instead of your thanking us for inviting you to Lima, I feel we should be the ones thanking you for coming. I assure you that you will be given all the results received from this promotion as they are formulated in a brochure that is in the process of being prepared. We will be happy to put you on our mailing list—in fact, we will put you at the top of our list to be notified of any additional promotion we might conduct on air conditioning, heating, or refrigeration.

S. A. NIMS

"A newspaper conducted on the true and natural principles of such a publication ought to be the register of the times, and faithful recorder of every species of intelligence. It ought not to be engrossed by any particular object, but, like a well-covered table, it should contain something suited to every palate."—*John Walker.*

AIR CONDITIONING HEATING & REFRIGERATION NEWS
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Auto Cooler Assn. Takes Stand on Truth In Advertising

DALLAS — D. A. Brown, president of the Automotive Air Conditioning Association, Inc., recently issued a statement of policy regarding the association's stand for "truth in consumer advertising."

Backed by 11 manufacturers of custom automotive air conditioning equipment and 24 component manufacturers — all with national distribution, Brown commented that the consuming public had every right to expect retail advertising to be factual when describing an engineered product such as custom auto air conditioners.

Brown mentioned seven points of retail advertising practice that would not be condoned by the association:

1. False statements.
2. Misrepresentation in writing or in pictures.
3. Offensive statements.
4. Pointing up weaknesses of one or two products as typical of all.
5. Misleading prices or "price" advertising.
6. Pseudo-scientific advertising and claims.
7. Non-authentic testimonials.

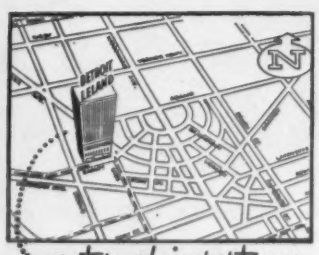
Through this policy, Brown said, it is hoped that the fast-growing custom automotive air conditioning market will be able to avoid the many conflicting claims and consumer confusion that once beset the early days of the room air conditioner industry.

Present annual sales for custom auto air conditioners now ranges in the 200,000 plus area, it was stated.

For Your Reprint Copy

"Short, Short Course in Air Conditioning Fundamentals." By D. C. Schaffer. Mail this ad with your name and address to: Air Conditioning, Heating & Refrigeration News, 450 W. Fort, Detroit 26, Mich.

Only 25¢ each.



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From the Files of the News

25 years ago . . .

The NEWS celebrated its 10th anniversary with an issue which reviewed the industry's progress over the past decade, for all intents and purposes just about the entire history of modern refrigeration and air conditioning practice. . . . In its editorial, the NEWS stated "in thanks for our subscriber's confidence in the NEWS, we believe that the NEWS, as well as the industry, is on the verge of great things, but come prosperity or decadence, hell or high water, the NEWS will continue to keep faith with its subscribers."

A review of air conditioning, from its initial application for industrial purposes to its spread into comfort applications, was contributed by the executive vice president of the Air Conditioning Manufacturers Association, who concluded that "air conditioning is now an everyday necessity." . . . Notable gains over 1929 employment figures are shown this year by several manufacturers.

Value of air conditioning orders booked in July were only 4% below June, according to statistics released by the Bureau of the Census. . . . A new Westinghouse office building and warehouse will have air conditioning in its 305,000 sq ft of working space.

10 years ago . . .

The prospect for all new houses being air conditioned within the immediate future was predicted as "very strong" with the opening of a new "$12,000-per" housing project in Freeport, N. Y.; the seven-room houses are each equipped with 1-hp York year-round conditioners with "maintenance costs no greater than a modern home refrigerator." . . . When Marshall plan people stationed in the tropics were supplied with air conditioned bedrooms and U.S. State Dept. people stationed there were **not**, sparks began to fly in government circles.

President Truman has asked the Dept. of Justice to seek a Taft-Hartley injunction against the striking copper miners (copper is a "basic" for Korean-inspired defense projects). . . . A 15-ton packaged air conditioning unit was the perfect answer to K. C. Thommesen, owner of the largest (70 ft) single-section factory-built diner in New York City; diner and air conditioner were recently installed at practically the same time.

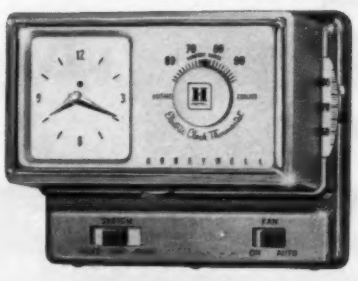
In Roanoke, Va. the chickens are air conditioned, too! Reason for the constant temperature (72° to 75°) and humidity (50%) controls is to eliminate "atmosphere variables" in testing effect of various feeds on chickens. . . . Basic methods and principles of modern textile mill air conditioning for efficient, economical mill operation are presented graphically in a new manual from Carrier Corp. . . . Air conditioning is a feature of Miami's first new hotel in 26 years—the Biscayne Terrace.

Dunham-Bush Names Walter C. Bullis

WEST HARTFORD, Conn.— James A. Mulcahey, vice president in charge of sales, Dunham-Bush, Inc., has announced the appointment of Walter C. Bullis as sales engineer to handle the company's air conditioning and refrigeration products in eastern New York State area.

W. C. Bullis

Bullis was formerly associated with Hussmann Refrigeration in St. Louis and New York City. He has a background of 30 years in the industry, at one time operating his own air conditioning sales, service, and contracting business, according to the announcement.



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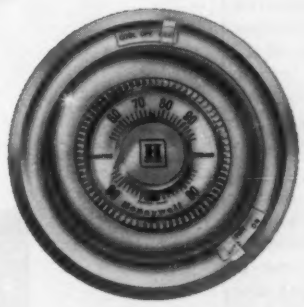
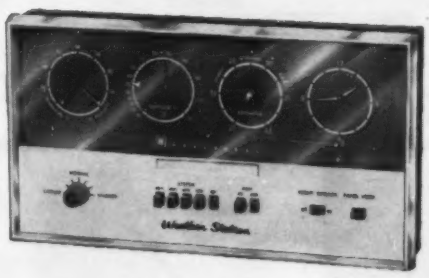


On every modernization job . . .
SELL-UP to the Honeywell
Year-Round Thermostat



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Honeywell
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Evacuation Procedures (2)

By Harold G. Saunders
Vice President In Charge of Engineering and Sales
Airserco Mfg. Co., Pittsburgh

Size of Pump To Use

There are too many variables involved in servicing a cooling unit to establish definitely the most practical size of pump for a service engineer to purchase for universal use.

If a service engineer is involved in handling only fractional horsepower units, a pump having a displacement of only 2 cfm should be adequate. However, keep in mind that when exhausting a cooling unit to the required total absolute pressures of a small fraction of a millimeter of mercury pressure, the pump has to handle a tremendously expanded volume of gases.

Also keep in mind that at the low finishing pressure required today, the metals of the cooling unit itself might also give off an unknown quantity of gases. Consequently, it is not economical from a time-saving point of view to invest in a tiny pump to do a man-size job.

No one can state with assurance how long it will take for any size pump properly to service a cooling unit, because it will depend upon how wet the unit is that is to be dehydrated, as well as the amount of piping to be dried out.

Airserco has specialized in this high-vacuum pump application for over 20 years. From our close contact with service engineers, the concensus is that for the average service job the 3 cfm pump is the most economical size for servicing cooling units from the fractional horsepower up to 10-ton units. For larger units, the 8 cfm size pump is universally used.

There are exceptions to this rule-of-thumb sizing of a pump. Permit us to cite an example. (Keep in mind that the pump-down time depends upon the internal volume of the piping in a system to to exhausted.) If you have a 5-ton floor model air conditioning unit to service, a 2 cfm pump might be large enough. However, with a 5-ton refrigeration unit in a supermarket where a few hundred feet of piping has to be exhausted, a much larger pump would be the most economical size of pump to use.

High Vacuum Gauge

The selection of the proper type and range of high vacuum gauge is just as important as your selection of the high vacuum pump. The ordinary dial vacuum gauge, or mercury manometer, does not permit reading the high vacuum required to meet modern specifications.

For example, we previously stated that modern requirements call for a cooling unit to be degassed to a vacuum of 29.997 in., referred to a 30-in. barometer reading. This is too clumsy a unit to use even if a gauge were available to register such a high vacuum in inches of mercury.

The practical answer is to think of high vacuum in units of pressure above absolute zero pressure. To convert the above magnitude of vacuum into units of absolute pressure, you have to subtract this 29.997 in. from 30.000 in., giving an absolute pressure above zero pressure of .003 in. of mercury pressure.

Because the inch does not lend itself to minute divisions, it is more convenient to convert the inch into its equivalent length in the metric system of units, the *millimeter*. As there are 25.4 millimeters in an inch, this .003 in., multiplied by 25.4, becomes approximately .075 mm of mercury absolute pressure. Consequently, in discussing units of high vacuum, we forget this word vacuum and think only of the total pressure in the cooling unit related to absolute zero pressure.

You can note that this total absolute pressure is considerably lower than the 1 mm of mercury pressure which was quite acceptable 10 years ago, but no longer generally acceptable as a finishing pressure for a modern cooling unit.

In selecting the type of gauge, investigate its principle of operation. You are basically interested in obtaining a gauge that will register the presence of moisture in the mixture of gases and vapors which your pump is removing from the cooling unit.

This makes useless to you the use of the McLeod type of gauge frequently recommended. The reason is that a McLeod type of gauge cannot give you a registration of the relative amount of moisture in the mixture of gases and vapors being removed from the cooling unit.

The McLeod type of gauge gives you a very misleading lower reading of the total absolue pressure because it registers only the partial pressure of the air in the mixture and not the additional partial pressure contributed by the presence of water vapor.

Obtain an electrical gauge because it can continuously register the total absolute pressure of the mixture of gases and vapors being removed from the cooling unit.

Range of Pressure Reading Of Gauge Important

The range of pressure readings of an electric gauge is very important to you. Some electric high-vacuum gauges do not start reading the pressure in a unit until the pump has reduced the pressure to 1 mm of mercury.

By that time, any cause of delay in servicing a unit has been overcome, and most of the moisture has been removed. The most variable and time-consuming portion of your dehydrating cycle occurs between 20 mm and 1 mm of total absolute pressure.

From the steam table, you

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Accommodates

THE NEW TYPE AM MONOMOTOR®
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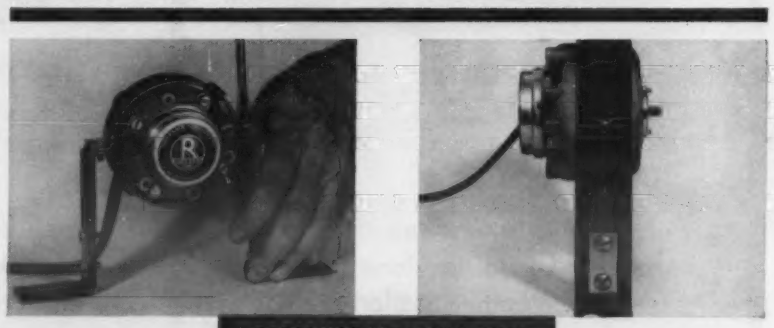
⅜ths inch smaller diameter allows motor to fit right into bracket now in unit—no bending, squeezing, pinching.

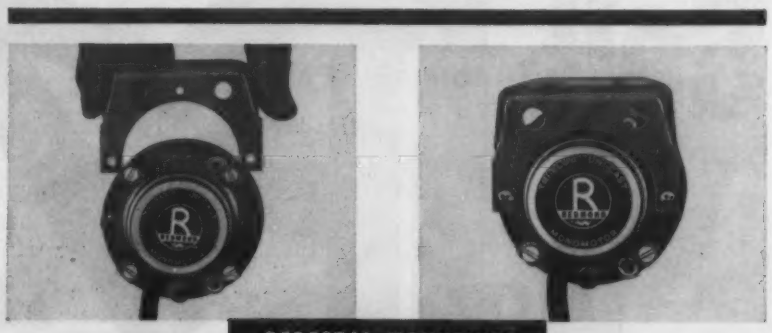
Fits all rear-mounting applications. 6 mounting holes make it easy to mount motor on the bracket.



PERIPHERAL MOUNTING

You can easily replace motors with peripheral mounts or that are lug-mounted.

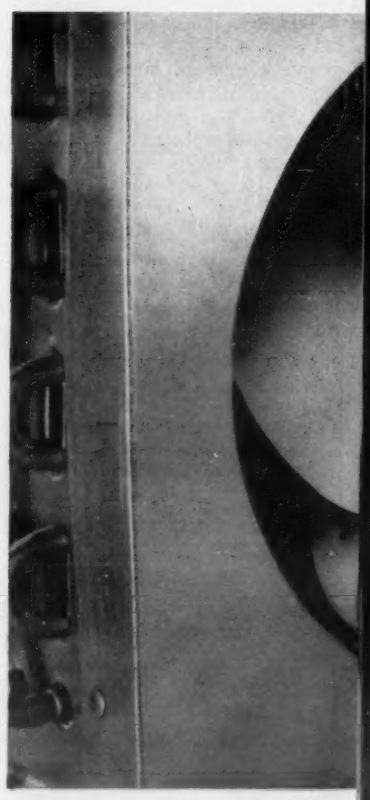
In a peripheral mount, the AM motor can be adjusted to any depth.



PEDESTAL MOUNTINGS

Pedestal bracket fits right over motor—note number of holes for affixing.

Pedestal bracket attaches easily in any of numerous combinations available.



FREE
BROCHURE

Type AM Catalog Page has complete information: dimension diagrams; model numbers; sizes; weights. Send request to Distributors Division, Redmond Company, Inc., Owosso, Michigan.

DISTRIBUTORS DIVISION

n note that when a system is 72°, dehydrating starts when e pump has exhausted the it to a total absolute pressure about 20 mm.

Airserco has specialized in pplying this type of electric cuum gauge to the service en- neer so that he does not have fly blind during the most riable and time-consuming rtion of his servicing job.

The Airserco Gauge, No. 90, gives the service engineer continuous visual registration the progress of the dehydrat- g and degassing cycle from art to finish. At all times the rvice engineer knows the rea- n for any delay, whether it is used by excessive moisture or e unit has a leak.

When discussing total abso- te pressure in a fraction of a llimeter of mercury pressure, is convenient to divide this llimeter unit of length into 000 parts and call this minute unit a micron. (A micron is 1/25,400ths of an inch.) As 1 millimeter = 1,000 microns, 0.100 mm becomes 0.100 × 1,000 or 100 microns. Likewise 0.050 mm of mercury pressure becomes 0.050 × 1,000 or 50 microns of mecury pressure and spoken of as a pressure of 50 microns.

By equipping yourself with a high vacuum pump and the proper type of high vacuum gauge, you can certify to your customer that the cooling unit was properly dehydrated and degassed before it was charged with the refrigerant.

A more comprehensive discussion of this whole subject is available in the Airserco textbook titled "Review of Vacuum for Service Engineers." This textbook also reviews the subsequent operation and equipment for precision charging with refrigerant and oil.

(The End)

TECH CENTER

by FRANK J. VERSAGI

16,000 Compressors Analyzed

(A continuation of the study of 16,000 compressors by IBM analysis.)

HERMETIC vs. NON-HERMETIC CALLS PER MACHINE show that, over the years, hermetic equipment has consistently required fewer calls than open-type equipment. The two curves roughly parallel each other, with the open-type curve reaching 1.27 calls per machine for 1960 and the hermetic curve stopping at 0.83 call. In actual numbers for 1960, these calls were made on 9,924 hermetic units and 4,592 on open ones.

REFRIGERANT-12 vs. REFRIGERANT-22 in open low temperature fixtures show R-22 equipment needing less calls per machine than R-12 units for all the years from 1956 through 1960. In 1955, R-22 equipment needed 1.5 service calls per low temperature machine and R-12 needed 1.3. The curve from 1956 through 1960 forms a shallow sine-wave effect averaging 0.8 call for R-22, 1.1 calls for R-12.

Annual calls per 100 units (condensing unit only) on the same comparison between refrigerants shows R-12 units calling for 72 calls per hundred; R-22 units calling for 26 calls. Compressors, leaks, and belts accounted for most of the service calls.

ANNUAL MATERIAL REPLACEMENT per 100 machines: Belt replacements dropped from 12 in 1955 to six in 1960. Motor replacements dropped from 10 in 1955 to five in 1960. Blower-motor replacement dropped in 1956 and 1957, then climbed gradually to about eight in 1960. The rate of drier replacement has dropped rapidly—from 23 per 100 machines in 1955 to 10 driers in 1960. Expansion valves have also dropped from six replacements per hundred in 1955 to three in 1960.

Refrigerant replacement calls form an up-and-down curve. Almost 30 calls needing refrigerant were made per 100 machines in 1955; the figure dropped to about 22 in 1956, rose again, then dropped slightly to 1960's 25 calls per 100 machines.

Time clock replacement trends downward from 1956's four per 100 machines to less than three for 1960.

Refrigerant replacement per leak has climbed from 12 lbs. in 1955 to 16 lbs. last year.

ANNUAL AVERAGE INSTALLATION HOURS per remote condensing unit holds steady at about 34 hours.

WATER TOWERS, CALLS PER 100: Dirt and slime accounted for four calls per 100 towers; drains, 10; fans, nine; pumps, 70; belts, 21; motors, 16; magnetic starters, nine; electrical difficulties, 11; water line leaks, five; water tower leaks, 11.

CALLBACKS ON WATER TOWERS: 21% on motors; 7% on belts; 10% on fans; 28% on pumps; 11% on tower bodies; 2% on valves; 7% on magnetic starters; 11% on electrical difficulties; 3% miscellaneous.

ANNUAL AIR CONDITIONING CALLS PER MACHINE level off at 1.8 from a low in 1955 of 1.1 and a high in 1958 of 2.2. Man hours per air conditioning call are about 5.5; hours per system-year are 10.

AIR CONDITIONING SERVICE CALLS per 100 Systems: Leaks, 31; controls, 16; electrical, two; compressors, 38; air handling units, two; water, two; dirty tower, two; fan belts, 22; filter and coils, 15; magnetic starters, three; feed water valves, seven.

AIR CONDITIONING CALLBACKS are accounted for in this way: motors, 18%; belts, 9%; condensers, 25%; air handling units, 2%; leaks, 20%; controls, 9%; starters, 11%; electrical, 3%; remainder miscellaneous.

HEATING HOURS PER SYSTEM RISE generally from 1955 to 1960's 11 hours per heating system. Typical service breakdown on oil burners per 100 burners: motors, 10; electrodes, six; unit heater motors, 11; vent valve, four; stack switch, 13; thermostat, eight; electrical, seven; low water cut-off, 11; boiler feed, six; out of oil, 13; dirty nozzle, 12; no apparent trouble, two; oil pump, five; dirt, nine; low or flooded system, six.

CALLBACKS ON HEATING: motors, 11%; belts, 1%; stack switch, 5%; controls, 17%; boiler, 5%; vent valves 3%; unit heaters, 9%; leaks, 5%; burners, 25%; tanks and fuel, 7%; thermostats, 3%; electrical, 6%; remainder miscellaneous.

(The End)

Redmond Condenser Fan Motor All Mountings

TYPE AM

These Features Make The New Single Bearing Type AM Your Number 1 Condenser Fan Replacement Motor

As you can see from the photographs at left, now you need to stock only this one motor to accommodate all mountings and brackets—rear, peripheral, and pedestal.

The diameter of the new Type AM MonoMotor® has been reduced 3/32ths of an inch, so it fits right into rear-mounting brackets without any bending or knuckle-busting. The smaller size and lighter weight make it easy to handle when you are working on a unit. And of course the fact that it is up to 25% lighter in weight than are competitive motors means real savings in shipping costs for you.

When you install motors that last, you get satisfied customers. Life tests prove that the Type AM has longer life than competitive motors. One of the reasons that the AM gives longer, trouble-free operation is the exclusive Redmond patented oil system, which provides more effective oil recirculation. The new AM has the best oil slingers in the industry. Redmond's patented features guarantee no oil leakage in use or in shipment.

Your customers will like the new AM MonoMotor® because it is whisper-quiet. Extremely close manufacturing tolerances combined with Redmond's patented controlled rotor end play feature eliminate the end play noise problems found in conventional motors.

All-angle operation is another feature of the AM—it is designed for all-position mounting, vertical shaft up, shaft down, or any angle.

The Standard of Dependability

Redmond Company, Inc. OWOSSO, MICHIGAN

Subsidiary of

OOKSVILLE, ONTARIO • CONTROLS COMPANY OF AMERICA • ZUG, SWITZERLAND

Crystal Tips Unit Makes Cubes or Chips

● A new compact Crystal Tips 2-in-1 automatic ice maker, designated the model B-11, which will make either ice cubes or ice chips, depending upon the customers' requirements, has been introduced by American Automatic Ice Machine Co., Dept. AH&RN, Faribault, Minn.

This model will produce up to 90 lbs of ice per day. As the ice is made it is automatically stored in a fully insulated, stainless steel lined storage bin. The storage bin has a capacity of up to 60 lbs of ice.

Other features of the Crystal Tips model B-11 include new styling with full width, stainless steel access door, new urethane foamed-in-place insulation, and completely automatic operation.

Cooling Tower Employs Glass Fiber Parts

● Increased cooling tower life and reduced maintenance time are said to be prime user advantages of the DC model "Qualitower" engineered and manufactured by Belcher-Young of Tampa, Inc., Dept. AH&RN, 7102 Interbay Blvd., Tampa, Fla.

"In designing its Towerdrive power package, Belcher-Young engineers incorporated all moving parts, motors, bearings, and vee-belt drive in a single unit that operates in clean, dry air," the company said. "This eliminates moisture infiltration and minimizes maintenance time normally caused by water effects."

Reinforced shatterproof glass fiber is used for fan blades, fan thimbles, sump, corrugated siding, and corner trim. Light in weight, the glass fiber siding "provides super forced impact and flex strength and is color saturated to blend with the sky," it was stated.

Qualitower's DC model is available from 60 through 1,100 tons.

Tube Cutter Needs Only 2-In. Clearance

● A new compact tubing cutter is now being marketed by the Robinair Mfg. Corp., Dept. AH&RN, Montpelier, Ohio. Principal feature of the new cutter is that it requires only a 2-in. clearance from the center of the tubing regardless of tubing size, it was stated.

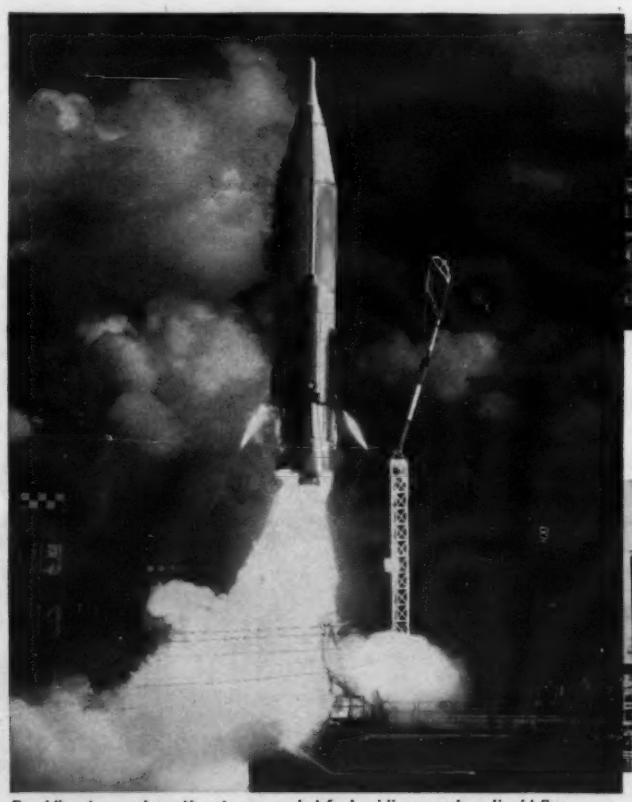
Both the cutter jaw and the roller jaw move together so that the over-all length of the tool does not change within its cutting range of ⅛-in. through ⅞-in. tubing.

Converts Old 'Stat For Zone Control

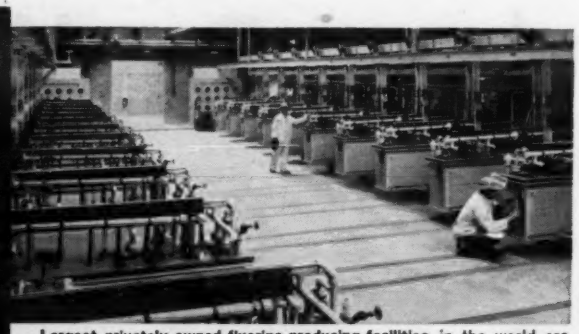
● A control that permits the existing 2-wire thermostat to be utilized when modernizing any existing warm air heating or air conditioning system to provide zone control of both heating and cooling is offered by the Econo Products Co., Div. of Viking Instruments, Inc., Dept. AH&RN, East Haddam, Conn.

"The purpose of the control, called the 'Zone-A-Trol Convert-O-Stat,' is to eliminate the problem or possibility of defacing or marring walls which frequently occurs when changing over from older model thermostats of a larger or different shape or size," it was pointed out.

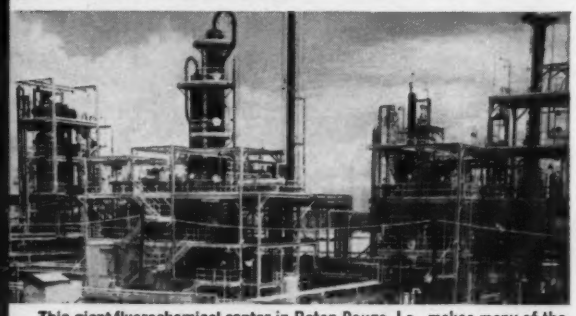
"The Convert-O-Stat converts any existing 2-wire thermostat or 3-wire Series 10 thermostat, to 3-wire single pole double throw circuit which is required to control the operation of modern low voltage zone controls used for year-round control of both heating and cooling cycles. By utilizing the Convert-O-Stat, the contractor is able to utilize the existing thermostat and also eliminate any difficulties that might arise in snaking extra wires through the walls to remote or hard to reach locations."



Providing tremendous thrust, new rocket fuel oxidizers such as liquid fluorine, chlorine trifluoride and other halogen fluorides may help us conquer space. Like "Genetron" fluorinated hydrocarbon refrigerants, they are important developments of General's long research in fluorine chemistry.



Largest privately-owned fluorine producing facilities in the world are located at General Chemical's Metropolis, Ill., Works. In these cells elemental fluorine is produced for use as a high-energy oxidizer of rocket fuels and for production of uranium hexafluoride for the Atomic Energy Commission. Allied Chemical's leadership in fluorine chemistry is applied to continuing improvement of "Genetron" refrigerants.



This giant fluorochemical center in Baton Rouge, La., makes many of the fluorine-based compounds required by industry and is a major production center for "Genetron" refrigerants. "Genetron" refrigerants are also manufactured in Danville, Illinois. Soon a new plant in Elizabeth, N. J., will provide a large new source for "Genetron" refrigerants.

What do rockets have to do with genetron super-dry refrigerants?

Just this. Part of the "big push" into outer space may come from fluorine-based propellants now being supplied by General Chemical to the nation's rocket and missile research centers. The same know-how that makes General Chemical the leader in fluorine chemistry applies equally in other areas—especially in the development and production of "Genetron" fluorinated hydrocarbon refrigerants.

Behind "Genetron" Super-Dry Refrigerants is a research organization which is internationally recognized for its work in fluorine chemistry. Even more important to every user of "Genetron" refrigerants are the Company's advanced manufacturing facilities, which have helped bring quality standards for fluorinated hydrocarbon refrigerants to new highs of purity and dryness—a major contribution in itself.

"Genetron" Refrigerants are approved, accepted, *preferred* because they are *performance-proved.* Refrigeration engineers, contractors and servicemen endorse them. Wholesalers recommend them.

It makes sense to rely on the leader in fluorine chemistry for fluorinated hydrocarbon refrigerants. Next time you order, insist on "Genetron" and be sure of the best! Available from wholesalers everywhere.

Allied Chemical

GENERAL CHEMICAL DIVISION
40 Rector Street, New York 6, N. Y.

Look to the leader in fluorine chemistry... insist on "Genetron."

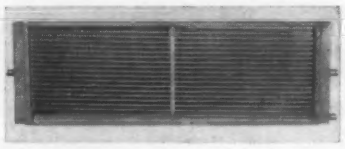
Gas Unit Heaters Use Centrifugal Blowers

● A new line of American-Standard Series NB gas-fired unit heaters equipped with centrifugal blowers is now available from American-Standard Industrial Div., Dept. AH&RN, Detroit 32.

"Selection of centrifugal blowers for these units has resulted in unusually low operating noise level," the company said. "They are recommended for use in installations where the need for extreme quietness of operation rules out propeller fan type units.

"The Series NB unit heaters feature flexibility with regard to placement of the unit. Because of an ability to overcome duct resistance, they are well suited for remote location with a run of duct to the heated space."

The heaters are available in capacities from 50,000 to 250,000 Btuh input.

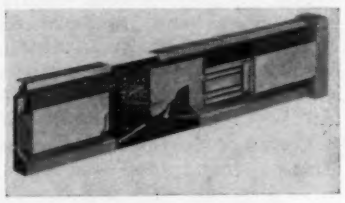


Distribute Steam Evenly Over Coil

● Unique "Equa-Jet" design is featured in Bohn Aluminum & Brass Corp.'s new NFD steam coils now being manufactured in Bohn's Danville Div., Dept. AH&RN, Danville, Ill., the company announced.

"Supplying steam from both ends of the NFD coil through Bohn Equa-Jet inner distributing tubes, this design provides an even distribution of steam across the entire coil face," it was stated. "The tubes are automatically self-centering in the condensing tubes and they have their jet orifices facing in the same direction as the steam return—these features facilitate an especially free flow of condensate. Condensing tubes are pitched toward return connection."

Available in standard heights, the coils also feature die-formed plate-type "Agi-Flo" aluminum fins in standard lengths from 72 to 144 in. Headers at both ends of coil are of heavy-wall seamless copper with die-formed end caps.

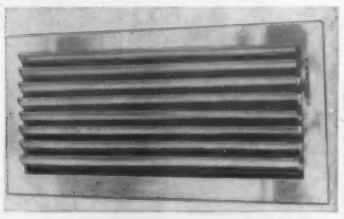


Perimeter Heaters Use Higher Voltage

● Perimeter baseboard heaters with a 277-volt rating have been introduced by the Wesix Electric Heating Co., Dept. AH&RN, 390 First St., San Francisco 5.

The higher voltage heaters were brought out because of the large number of commercial and industrial establishments which have installed 277-volt heating circuits, the company said. These circuits can produce the same power and heat output from a lower amperage over a smaller wire, it explained.

The baseboard heaters feature a ¼ in. mesh grille at top and bottom to prevent combustible objects from coming into contact with the heating element. They have a heat output of 250 watts per ft and a maximum panel face temperature of 130°F.



Curved Blades Extend Beyond Grille Face

● A new series of registers and grilles with curved aluminum blades has been introduced by Air Control Products, Inc., Dept. AH&RN, Coopersville, Mich.

The curved blades extend beyond the grille face and adjust individually to each installation. Four different face designs are offered, providing one, two, three, or four-way pattern control.

"The deflection can be changed easily to meet the changing seasonal requirements of combined heating and cooling systems," the company noted.

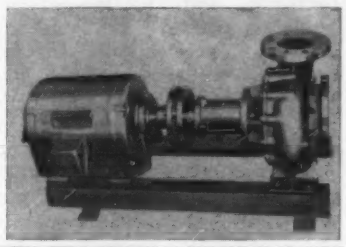
Starting Relay Pushes Onto Terminal Pins

● A new push-on type current motor starting relay for use on hermetic compressors having pin-type terminal clusters has been announced by Metals & Controls, Inc., a corporate division of Texas Instruments, Inc., Dept. AH&RN, 34 Forest St., Attleboro, Massachusetts.

The relay—an advanced design of the "Klixon" 9660 relay—"can easily be installed simply by pushing onto the compressor terminal pins," the company said. "This eliminates the need for mounting brackets, screws, and special leads and greatly reduces installation and material costs.

"The relay cover and spool are made of a strong, high temperature phenolic. The internal mechanism consists of a solenoid coil, a steel armature, and a bridging type contact arm."

Pump Features Forced Feed Lubrication



● Dunham-Bush, Inc., Dept. AH&RN, 179 South St., West Hartford 10, Conn., has announced an addition to its line of in-line circulators and A5 and A9 close-coupled centrifugal pumps.

"The new centrifugal pump, known as the B9, features sleeve bearing forced feed lubrication for long bearing life and a 'self-aligning' coupling that connects sleeve bearing motor to pump, eliminating necessity of on-job realignment and considerably lengthens life of coupling and bearings," the company said.

"Here's how sleeve bearing forced feed lubrication works: Rotor picks up oil from sump. Oil is forced up to oil stop and flows back to lubricate sleeve bearings and shaft. Oil passes through fingers, lubricating thrust washers and returns to sump. Process is continuous.

"Other features include: fabricated angle iron base for quieter operation and easy access."

Add Gas-Fired Boiler for High Capacities

● A new Type 26 boiler completes its new family of cast-iron, gas-fired hydronic products, according to Mueller Climatrol Div., Worthington Corp., Dept. AH&RN, 2005 West Oklahoma Ave., Milwaukee 1.

More details on the products described on these pages may be obtained by writing the manufacturer at the address given in each story.

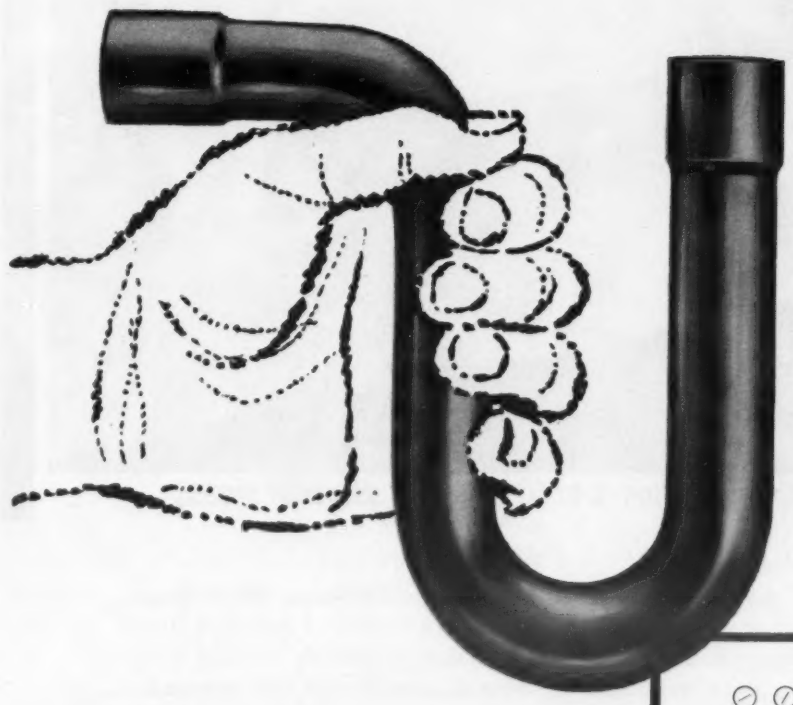
The Type 26 boiler line is designed for large capacity commercial and industrial low-pressure steam or hot water applications. It will be offered in 29 capacities ranging from a five-section 720,000 Btuh input to a 33 section 5,760,000 Btuh input model.

The boilers are rated at 180,000 Btuh input per flue-way, which is 2½ times greater than the old Type 21 boiler which the new line replaces, the company said. The new line is also more compact.

NEW! FROM MUELLER BRASS CO.

Streamline® ONE-PIECE SUCTION-LINE P-TRAPS

FOR EFFICIENT OIL MIGRATION IN REFRIGERATION AND AIR-CONDITIONING SYSTEMS*...

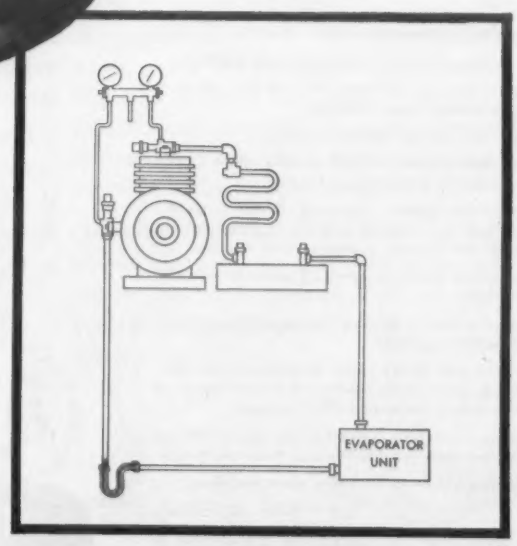


Streamline wrot-copper suction-line P-Traps, just introduced by Mueller Brass Co., answer a definite demand for an effective method of promoting efficient oil migration in modern refrigeration systems. Today, for example, in many large food markets and other outlets employing refrigeration, compressors and condensers are installed on balconies. Such remote units are likely to have long horizontal suction lines or vertical risers exceeding 3′ in height which create the problem of unsatisfactory oil return to the compressor. The installation of a Streamline Suction-Line P-Trap quickly and effectively eliminates this problem because the P-Trap drains the oil from the horizontal runs approaching the risers; the oil then migrates back to the compressor, either as a rippling oil film, a mist, or a transparent colloidal dispersion. Vapor velocity can fall as low as 160 feet per minute and satisfactory oil return can still be achieved when a Streamline P-Trap is installed.

* The need for, and the effect of P-Traps on systems having long horizontal suction lines or vertical risers, is fully discussed in Section 66 of the R.S.E.S. Service Manual.

ONE PIECE DESIGN SAVES LABOR AND MATERIALS

The new Streamline P-Trap replaces the cumbersome assemblies of individual fittings with one piece of seamless copper tube, thereby reducing the high costs of labor and materials. The P-Trap is manufactured in 3 popular O.D. sizes; ⅞", 1⅛" and 1⅜", and is ready to be soldered into the line. Use this handy P-Trap in your next installation. Your wholesaler has them in stock. For further information, send for Product Data Sheet No. 14.



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MUELLER BRASS CO. PORT HURON 13, MICHIGAN

VAMPCO ALUMINUM PRODUCTS, LTD., STRATHROY, ONTARIO • Exclusive Canadian Representative for Mueller Brass Co. • Air Conditioning and Refrigeration Products

Air Conditioning Text

SYRACUSE, N. Y. — A new textbook on air conditioning designed primarily for use in vocational schools and technical colleges has been written by Paul Lang, technical editor in the application engineering department of Carrier Air Conditioning Co.

Entitled "Principles of Air Conditioning," and published by Delmar Publishers, Inc. of Albany, N. Y., the book describes in simple terms the "how to" and "why do" of technical air conditioning problems encountered by technicians and servicemen, it was pointed out. Included in the 327 pages are more than 500 illustrations and tables related to air conditioning equipment.

Questions and problems at the end of each chapter highlight the important facts presented in that chapter.

A separate pamphlet containing answers to problems in the textbook and a laboratory guide manual are available to instructors in vocational schools and junior colleges.

Quick-Freezing

BUFFALO — Niagara Blower Co. has issued Bulletin 144 describing the "No-Frost" method of continuous production in quick freezing food produce and prepared food specialties.

Illustrated with diagrams and photographs it shows how chilled air at high velocity is held at uniform freezing temperature and full capacity is kept constant by the continuous automatic removal of airborne moisture, preventing the formulation of frost within the freezer.

Sound Survey Meter

WESTBURY, L. I., N. Y.—A new two-page brochure fully describes the hand-held Type B transistorized sound survey meter produced by The Korfund Co., Inc., 53A Cantiague Rd. here.

The meter, which weighs only 1 lb including battery, is designed for one hand operation.

Bulletin K18C relates that the meter has a frequency response within the ASA specified tolerances in the 45-8,000 c.p.s. noise spectrum, has excellent stability, and is free from tube microphonics.

A special feature is its ability to measure relative magnitudes of vibration or structure-borne noise by means of a mating transducer which plugs into the meter.

To obtain any of the literature items described on this page, write to the firm mentioned in the story at the address supplied.

Current Literature

2, 3, and 4-Way Valves

VALLEY STREAM, N. Y. — Herion, Inc., P. O. Box 184 here, offers a condensed catalog to acquaint readers with its line of 2, 3, and 4-way valves for air, gas, water, steam, general oils and hydraulic oils in pressure ratings up to 4,500 psi.

The line consists of a variety of manually operated, manual-override solenoid-operated, solenoid-operated or controlled direct acting, solenoid controlled pilot-operated, and other specialty pressure and flow control valves.

Valve manifold units with or without subplate mounting are shown. Also covered are specialty valves for refrigeration and air conditioning, temperature and pressure controls for industrial furnaces, heating and refrigeration systems plus controls, valves, and accessories particularly designed for refrigeration and air conditioning servicing.

A brief history of the company, showing present plants and facilities both externally and internally, is included in the catalog.

Absorption Refrigeration

NEW YORK CITY — A new study of the relationship between chemical structure and efficiency of the absorption-refrigeration cycle has been completed by the American Gas Association.

The project's aim was to investigate the influence of chemical structure on thermodynamic properties such as vapor pressure, the heat capacity and the activity coefficients of solutions.

The research study was conducted for AGA by Prof. Donald H. Andrews and Raymond A. Rousseau of John Hopkins university. The project was sponsored by the Task Group for Air Conditioning Research.

Copies of the report "Solution Thermodynamics for Absorption Refrigeration" (Catalog No. 5/ACR) are available at $1.50 each from the Order and Billing Department, American Gas Association, 420 Lexington Ave., New York 17, N. Y.

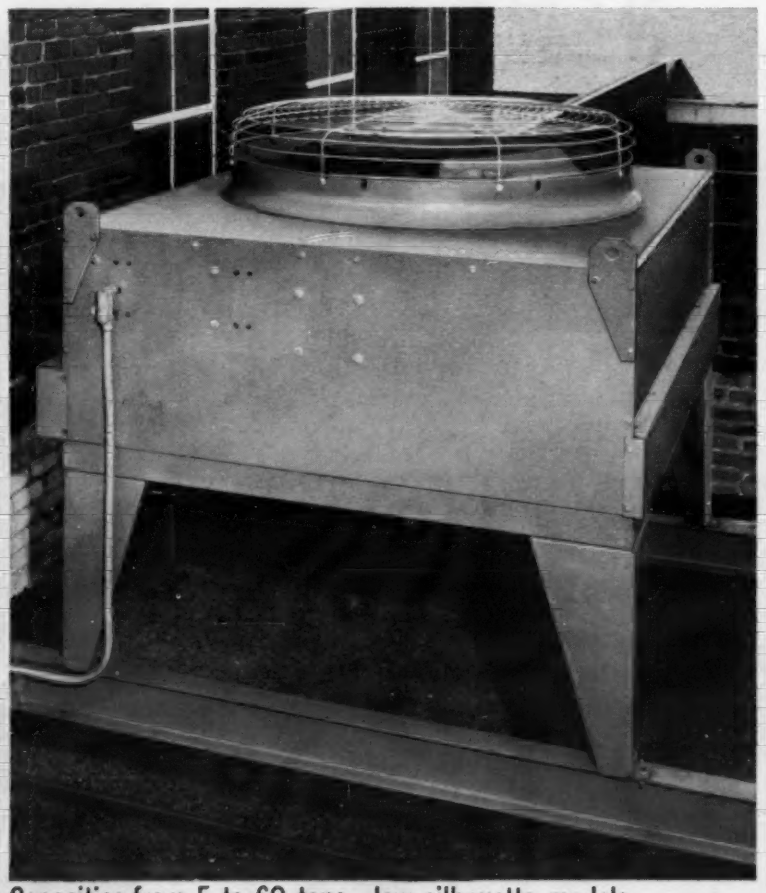
Contaminants

LIVINGSTON, N. J. — Four-page Bulletin 6106 giving comprehensive data on the causes and harmful effects of many contaminants which form within a refrigerant system to produce hermetic burnouts, inefficient operation, and eventual shutdowns of systems, was published recently by the McIntire Co. here. Included in the bulletin are methods of prevention and elimination of the contaminants through manufacturing and servicing precautions and by the use of effective driers, filters, and strainers.

End Sight, Sound and Water Problems with

LARKIN ZEPHYRCON

Vertical Discharge Air-Cooled Condensers



Capacities from 5 to 60 tons—low silhouette models

OUTSTANDING FEATURES

- Patented LARKIN cross-fin coil—aluminum fins bonded to staggered copper tubes.
- Circuiting designed for counter-flow operation.
- Low-speed fans, dynamically balanced, assure top efficiency, quiet operation.
- Each fan has two matched v-belts.
- Fan shaft mounted in ball bearing pillow blocks—permanently lubricated and sealed.
- Heavy-duty motors, drip-proof, NEMA frame, ball bearing, mounted securely on adjustable base within unit housing, protected from weather.
- Removable service door—easy access to motor and belts.
- Metal prepared through five-stage Oakite Cryscoat phosphating process.
- Primed with epoxy resin; finished with thermo-setting, plastic-base enamel—a triazine resin. Long-lasting, water-and-alkali-resistant.
- Safety-spiral wire guard heavily zinc-plated and Iridite-dipped for maximum corrosion resistance.
- Multiple circuiting available when specified.

Vertical air discharge LARKIN Zephyrcons, BFC-V Models, can be located anywhere regardless of prevailing winds. Noise is kept to a minimum because air discharge is skyward. Low silhouette does not detract from the general appearance of a building.

Heavy eye-bolts on all units facilitate lifting.

These units are built to take severe punishment from the elements in all climate conditions. Basic design LARKIN Zephyrcon air-cooled condensers have proved successful in thousands of installations throughout the world.

Write for Bulletin BFC 61, or see your wholesaler

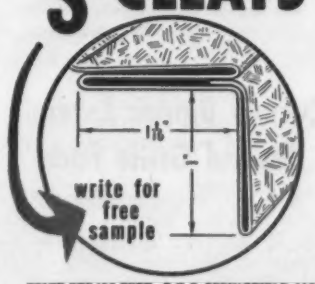
LARKIN COILS INC.

519 Memorial Drive, S.E. • P. O. Box 1699 • MUrray 8-3171

ATLANTA 1, GEORGIA

erect ductwork easily with

STANDING "S" CLEATS



PRICE PER 100 FEET—F. O. B. SPRINGFIELD, MO.

GAUGE	100-999 FT.	1000-4999 FT.	5000 FT. OR MORE	EST. WT./FT.
26	$7.20	$6.20	$5.90	.453
24	9.60	7.90	7.40	.578
22	10.50	9.00	8.50	.703

GALVANIZED – 10 FT. LENGTHS ONLY

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PAUL MUELLER COMPANY

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World Trade Briefs

ALBERT REBEL has been appointed export manager for the Air Conditioning & Heat Pump Div. of Holly General Co., a division of The Siegler Corp., Pasadena, Calif., and for Kritzer Radiant Coils, Inc., Batavia, Ill.

* * *

WELBILT CORP. has entered into a licensing agreement with Electrical Motors & Appliances, Ltd., Ramla, Israel, for the manufacture and sale of its home air conditioning units in Israel, it was announced by Alexander P. Hirsch, board chairman.

Hirsch also revealed that the company is now engaged in negotiations with manufacturers in five countries in Europe and South America for similar manufacturing and marketing arrangements on the air conditioners, as well as on other Welbilt products.

Electrical Motors' plant has a production capacity of about 10,000 air conditioning units annually. Of this total, 50% will be for domestic consumption, with the other 50% earmarked for export to neighboring countries. The units are designed to sell for 685 Israeli pounds, equivalent to approximately $340.

* * *

UGENE S. ANDERSON, who has had special training in foreign trade, has been appointed to the staff of the export department of Cleaver-Brooks Co., Milwaukee, manufacturer of packaged boilers. C. Conrad Rinelli, export manager, said the appointment was made in anticipation of an expansion of Cleaver-Brooks' foreign trade.

* * *

LIBERIA'S TALLEST STRUCTURE, the 10-story national Treasury Department Building under construction in Monrovia, will be completely equipped with an air conditioning system supplied by Westinghouse Electric International Co.

The installation will have a cooling capacity of 180 tons of refrigeration, according to R. L. Jeans, vice president-marketing of Westinghouse International, who announced the order. It will consist of 16 self-contained "Unitaire" units ranging from 5 to 26 hp, most of which have air-cooled condensers.

Now nearing completion, the Treasury Building will be the most modern in the capital city, Jeans said. The air conditioning installation is scheduled to be completed in September.

The new structure, which consists of the main 10-story tower and a four-story annex containing an auditorium, a library, and a conference room, is scheduled to be inaugurated in November. It is being erected under the direction of the Liberian Ministry of Public Works.

The order was secured by Rasamny Brothers, of Monrovia, Westinghouse distributor.

The Westinghouse plant at Staunton, Va., is supplying the air conditioning apparatus for the building.

* * *

GENERAL ELECTRIC CO. has recently moved its international division from the Socony Mobil building in New York City to a 12-story structure at 159 Madison Ave. The division will occupy the entire 120,000-sq ft, air conditioned building. It is located at the corner of 32nd St.

* * *

CRANE CO. announced plans to begin manufacturing operations in Australia. T. M. Evans, chairman, said construction would start immediately on a factory, near Sydney, to produce valves, water meters, and pumps.

It will be staffed by Australians. The new subsidiary will be known as Crane Australia and will be closely associated with Crane Ltd., London, England. Crane now has 22 manufacturing facilities in seven foreign countries.

* * *

R. J. DOUGLASS WAS recently elected president of Westinghouse Electric International, S. A. at Geneva, Switzerland. He succeeds P. G. Schmitt, who was named assistant to the president of Westinghouse International Co.

Douglass was previously vice president and regional director of Westinghouse Electric Co., S. A. in Buenos Aires.

Pioneer T. K. Quinn Dies of Heart Attack

SPRINGFIELD, Mass.—T. K. Quinn, who rose from a $7-a-week factory job to the head of General Electric Co.'s new refrigerator department in 1927, when he was only 34 years old, died recently of a heart attack. He was 68.

Quinn left G-E in 1936 to become president of Maxon, Inc., New York City advertising agency. In 1944, he and several independent appliance dealers formed Monitor Equipment Corp. Quinn was president until he retired last year.

Quinn became widely known as a critic of big business. In 1955, he told a Congressional committee there should be Federal restraints on the "sheer size and power" of such companies as General Motors.

PLAN TO BE THERE!

ATTEND EXHIBIT

12TH NATIONAL EXPOSITION AIR-CONDITIONING, HEATING & REFRIGERATION INDUSTRY

LOS ANGELES

FEBRUARY 12-15, 1962

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THE NEW TINY-T COMPRESSORS REDUCE

height 1 1/16"

width 1 1/2"

diameter 2"

weight 10-16 lbs.

cost 5-15%

The new Tecumseh-engineered T-line offers the OEM field the widest flexibility available in machine compartment designs. Six models blanket freezer and domestic refrigerator applications from 1/6 to 1/3 HP; plus two models for high temperature applications.

Capacities of each Tiny-T up to ¼ HP match a corresponding Pancake model, leaving a freedom of choice regarding low headroom or slim front-to-back dimensional requirements. In addition to effective savings in size, weight and cost Tecumseh offers extra savings in assembly time. The new plastic cover, shown on the T-model above, is used in conjunction with a push-on relay. Lock wires secure the overload and the cover is held with a spring steel strap. This greatly simplifies the assembly of electrical components since no screws or tools are needed to assemble components or cover.

Check over the specifications in the left-hand column and see where Tecumseh T-models can fit into your designs. Call or write Tecumseh for full information and engineering data.

HIGH TEMPERATURE MODELS

Model T53—(1/5 HP) 2100 BTU
Model AT4C—(1/4 HP) 3100 BTU

LOW TEMPERATURE MODELS

Model T63—(1/6 HP) 525 BTU
Model AT5C—(1/5 HP) 850 BTU
Model T55—(1/5 HP) 625 BTU
*Model AT43—(1/4 HP) 980 BTU
*Model AT35—(1/3 HP) 1250 BTU
Model AT3512—(1/3 HP) 1500 BTU

Rating figures are nominal (plus or minus 5%) based on the following conditions:

	Back Pressure	
	High	Low
Condensing Temperature	130°F.	130°F.
Evaporator Temperature	45°F.	—10°F.
Return Gas	95°F.	90°F.
Ambient	95°F.	90°F.
Liquid Temp. Entering Expansion Valve	115°F.	90°F.

*Also available in High Torque Models CAT35 and CAT43 All above Models R-12

forty two million compressors in the field

TECUMSEH PRODUCTS COMPANY

MARION OHIO
TECUMSEH, MICHIGAN

FOREIGN OPERATING DIVISION: Tecumseh, Michigan

CANADA: Tecumseh Products of Canada, Limited, 185 Ashland Avenue, London, Ontario

Small Town Contractor Finds

5 Ways To Sharpen Operation

By George M. Hanning

LIMA, Ohio—It was a happy day when Russell L. Orchard decided that he had had enough of the cut-price service rat race.

The heating and cooling contractor resolved last year that he was through letting competition set his service rates for him. He determined to establish his rates at a reasonable level where he could realize a profit—and then stick to them. He counted on his reputation for good service and a guarantee on all service work to see him through.

From then on, he told his customers, his rates were $6 for the first hour and $4 for every hour thereafter. For out-of-town customers he tacked on an additional charge for travel time. This charge does not exceed $1.50 and he rarely travels more than 10 miles out.

Surprisingly enough, Orchard related, his customers did not object and his competitors, apparently waiting for someone to take the lead, quickly followed suit. The result was a much improved business climate here.

Though Orchard's service organization is comparatively small, the contractor obviously spends considerable time, effort, and money to see that it runs efficiently.

Orchard employs two servicemen, both trained and equipped to do both heating and refrigeration service.

Primarily in the home heating and cooling field, he also employs seven installation mechanics and one full-time sheet metal fabricator.

He and his brother Art do the selling and lend a hand on service, on installation, or in the shop whenever needed. Orchard merchandises Peerless heating and air conditioning equipment and XX Century furnaces. He fabricates and sells between 200 and 250 heating systems and 10 to 15 cooling systems a year.

Here are some of the things Orchard has done to improve the efficiency of his organization:

1. He has standardized on two basic forms which he uses for nearly all records. One form (Fig. 2) serves an a purchase order to suppliers and as an invoice for service calls. The other (Fig. 3) acts as a service record, a bill of materials for the shop, an installation worksheet, and a job cost record.

FIG. 1—Working in office with his secretary Phyllis Peters, Russel L. Orchard talks with customer on telephone. Secretary-treasurer of the Lima Indoor Comfort Bureau, he displays Silver Shield emblem. Sign on map at right boasts "1,500 heating and air conditioning installations in 15 years."

"We used to use more specialized record sheets," Orchard said, "but we found that we didn't need all the extra space on the forms. They were just taking up valuable space in the files.

"So we settled on these compact forms. They give us all the necessary information and are easy to file."

Installation and service records are filed both by address at which the equipment is located and by name of the owner. Periodically, owner files are cleared out, removing records of equipment the man no longer possesses (for example, equipment left behind when he moves to a new address).

2. He has started selling service contracts. Because he has been at it only a comparatively short time, his volume is not large as yet. But he feels the idea has merit.

Orchard offers his customers their choice of six types of service. These include labor only on heating, air conditioning, and electronic filtering and labor and parts for heating, air conditioning, and electronic filtering.

What Contracts Cost

The air conditioning and electronic filter services are offered only in connection with a heating service contract. For instance, the labor only contract for heating service is $12.50. For air conditioning, he adds $20 to this and for electronic filtering $5.

For service and parts, he charges $39.95 for heating, plus $25 for air conditioning and $10 for electronic filtering.

Basically, each agreement provides for a thorough check of the equipment once during the contract period, emergency calls during the contract period, and replacement of inoperative or defective parts (except specified major components such as burner, blower, heat exchanger, cabinet, automatic humidifier, compressor, evaporator, refrigerant lines, power pack, or collecting cell).

The contract also spells out eight conditions designed to protect Orchard against unreasonable demands or expectations on the part of the customer. These cover such things as limitation of liability, items the customer should check before placing an emergency call, tampering with the unit, damage by catastrophe, etc.

When Orchard sells a piece of equipment, he gives the customer one of these contracts free. Actually, it amounts to no

"Here's why I standardized on H&M cooling towers

...they're the only towers with a 20-Year Guarantee on the wetted deck surface!

"In my town, most air conditioning and refrigeration buyers prefer cooling towers for their installations. But local water conditions are pretty hard on the fill. Fungus and algae grow fast and furious—so fast that the accumulation actually blocks air flow and cuts tower capacity!

"After trying several makes, I standardized on H&M Cooling Towers. *The wood fill is specially treated with creosote applied under pressure,* and water plants and animals can't live on that! That's why the Halstead & Mitchell towers carry a 20-Year Guarantee on the wetted deck against failure due to fungus attack or rotting."

If you want towers that will last, and need a minimum of care, you should find out about H&M towers. Call your local parts wholesaler or write for Bulletin EC-500 (Propeller Fan Towers, 3 to 150 tons) or Bulletin ECKB-601 (Centrifugal Fan Towers, 5 to 30 tons). Halstead & Mitchell Co., Dept. H-92 Bessemer Building, Pittsburgh 22, Pa.

HM

Halstead & Mitchell

Cooling Towers • Air-Cooled Condensers • Air Handlers and Coils • Water-Cooled Condensers

Export Representatives: Sobal-Kielmann, Inc., 15 William St., New York 5, N. Y.

Orchard-- *To Break Loose A Frozen Compressor*

in an immaculately clean living room or dining room, he explained.

With the radio, the serviceman can communicate with the office from his truck. By having the serviceman check in every half hour, he can be readily given additional or emergency assignments in his area.

4. Orchard's service trucks are well equipped with all parts and supplies that a serviceman expects to need. Orchard likes "stand-up" trucks and has used them continuously since 1945. He likes the ease of getting in and out of the trucks and the extra room for stock and equipment. Used for both heating and cooling service, inventory is changed to fit the season.

Packed into each truck for the cooling season are:

Vacuum pump.

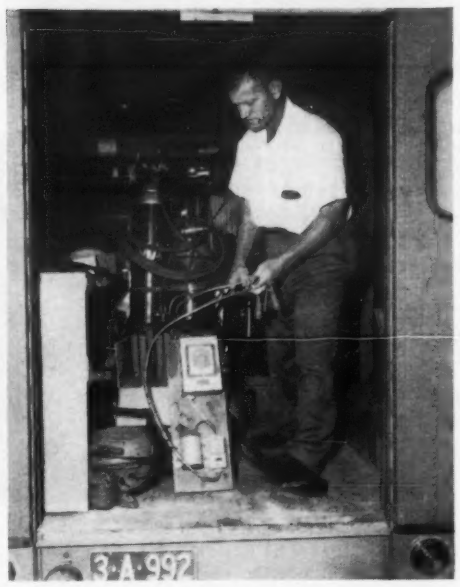

FIG. 5—Russell L. Orchard holds five leads of home-made device that shoots a surge of power through frozen compressors to break them loose. He is standing in rear of one of his service trucks.

Three sizes of motors, ¼, ⅓, and ½ hp.

Cylinders of Refrigerants 12 and 22, acetylene, oxygen, and dry nitrogen.

Assorted pulley wheels.

Fan belts.

Strainers and driers.

Starting and running capacitors.

Leak detector.

Temperature and pressure gauges.

Scales.

Silver solder.

Flaring tools.

Amprobe.

Velometer.

Thermometers.

Oil.

Cleaner for oils and water systems.

Hand tools.

Price book.

Invoice pad.

In addition, the serviceman carries a home-made device that Orchard has found useful at times to break loose a frozen compressor. (See Fig. 5.)

"If some mechanical difficulty in a compressor locks or freezes it," Orchard explained, "a sudden surge of power through the compressor will sometimes break it loose.

"With this device, the serviceman hooks up three wires to the compressor and two to the power supply. Power is then passed through a starting capacitor on the board to the compressor. If the compressor works, we know the capacitor must have been at fault.

"If it doesn't, the serviceman shuts off the capacitor sending a surge of power directly into the compressor. That may start it. If it doesn't it blows fuses all over the place," notes Orchard.

5. Orchard finds it expedient and profitable to operate his own sheet metal shop. While only one man works full time in the shop, the installers can do work there to make up fittings and ducts for current installations when necessary.

Orchard makes the shop pay by equipping it with machinery capable of producing parts in quantity. His men always make as many parts as a machine will produce at one time, even though they may be what Orchard calls "odd-ball" parts.

Standard size fittings are produced during slack periods and then boxed in cartons for future use. Beyond the sheet metal shop is a store room outfitted with a series of large bins. Each standard size fitting is kept in a bin, where installers can pick up as many as they need for a particular installation.

As the supply in the bin dwindles, cartons of that particular size fitting are dumped in to replenish the supply.

Excess "odd-ball' fittings—unusual sizes and shapes—are stored in an attic space where they are kept until they are needed. Knowing he maintains a supply of odd shaped parts, other Lima contractors often come to Orchard when they need special pieces. If he doesn't have them in stock, Orchard will fabricate parts for them.

Indicative of his standing in the community, Orchard is secretary-treasurer of the Lima Indoor Comfort Bureau.

At Odds with Silver Shield

While he is all in favor of efforts to uplift the level of heating installations in this area, Orchard has found himself at odds with the national leadership lately.

He objects to Silver Shield's insistence on a perimeter heating system as the only type qualified to receive its emblem.

Orchard says that he has installed jobs, and is installing them, that meet all the requirements of guaranteed comfort specified for a Silver Shield installation, but will not be approved because they are not perimeter.

Orchard insists that there are occasions where perimeter systems cannot possibly be installed in a home, particularly on the second floor of two-story structures of brick and concrete construction and in split level homes.

"I maintain that these installations will meet Silver Shield standards and I will guarantee it," he affirmed.

YOUR DAYS ARE NUMBERED

Just as sure as you're standing there, you'll soon be in the soup unless the water in your cooling tower or evaporative condenser is properly treated.

One of these hot days the accumulation of scale, slime and corrosion will be just too much for your cooling system to handle and you'll really be in hot water—

The simplest way to keep your air-conditioning operating at peak efficiency—without the threat of breakdown and expensive repair—is with Chemicator.

- Chemicator eliminates the need for periodic descaling, which eats away metal piping, is costly and inconvenient.
- Chemicator automatically prevents scale and corrosion, kills algae and fungus in your cooling tower or evaporative condenser in units of 5 to 300 tons.
- Chemicator is simple in design—inexpensive to install and operate—ready to perform a lifetime of trouble free service.

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Write for 12-page illustrated brochure.

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The Russell L. Orchard Co., Inc.

157 S. Pine Street Phone CA 9-9781

Nº 17954 Lima, Ohio, _____ 19__

TO: _____

NUMBER OF UNITS	DESCRIPTION (Be sure to give size and full description as specified in catalog.)	PRICE PER UNIT	TOTAL AMOUNT	DATE RECEIVED

FIG. 2—This simple form serves both as a purchase order to suppliers and as an invoice for service calls.

more than the first year guarantee the manufacturer provides. But it shows the customer the value of the service he is getting and prepares him to want to continue the service in succeeding years.

Orchard writes all service contracts to run for a year starting on April 1. This appears to him to be a logical starting point, for it is close to the end of the heating season and the beginning of the cooling season.

It also permits his secretary to do the entire job of clearing the files and mailing out contract forms at one time. It further eliminates confusion as to whether or not a particular job is under contract.

When attempting to sell a contract to a service customer, Orchard makes the deal attractive by offering to include the current service call in the contract price.

Through the use of service contracts, Orchard is able to group maintenance calls together so as to make maximum use of the servicemen's time.

3. Orchard will soon have his two service trucks, two installation trucks, and his own car equipped with walkie-talkie radios, all connected to a low-powered sending station at his office at 157 S. Pine St. here.

Orchard expects the new equipment, which will cost him less than $1,000, to not only speed communications with men in the field, but make a good impression on customers as well.

Although his men can usually be reached readily by telephone, it does not make a good impression on the customer to call a sooty or greasy serviceman to a telephone that may be located

(Continued on next page)

Compact Forms Save Space

NAME

ADDRESS

CITY

TO BE DONE AT:

DATE	ITEM	APPT.	NAME	LABOR HRS.	LABOR JOB	LABOR SHOP

MATERIAL COST TOTAL

USE TAX

OVERHEAD

NET COST TOTAL

BILLING PRICE

SALES TAX

NET COST TOTAL

NET PROFIT

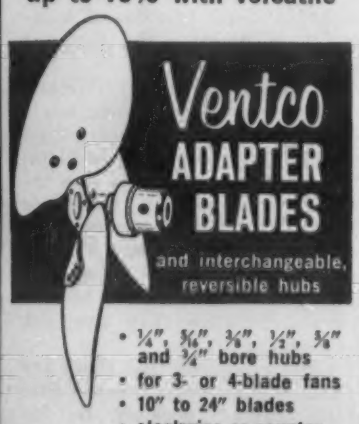
FIG. 3—This form (shown here are top of face side and bottom of reverse side) serves as a service record, bill of materials, installation worksheet, and job cost record.

Better Management

Marked Bins for Fittings

FIG. 4—Common in plumbing shops but not seen often in sheet metal shops is bin rack for small fittings. This corner of Orchard's shop contains three such racks. He claims they are real time and money savers.

Reduce fan blade stock up to 75% with versatile



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- ¼", 5/16", ⅜", ½", ⅝" and ¾" bore hubs
- for 3- or 4-blade fans
- 10" to 24" blades
- clockwise or counter
- precision engineered
- priced for profit

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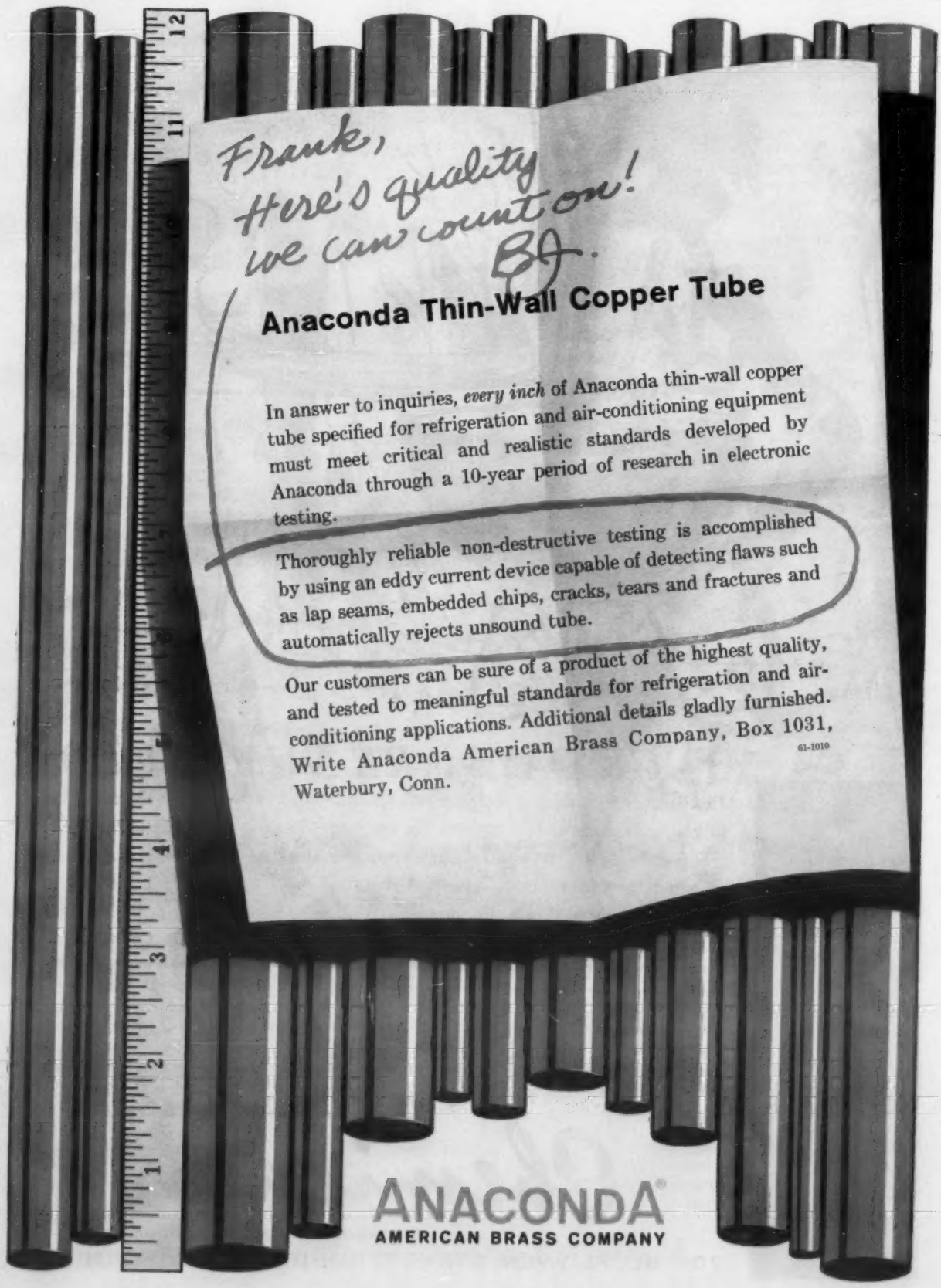
Frank,
Here's quality
we can count on!
BJ.
Anaconda Thin-Wall Copper Tube
In answer to inquiries, every inch of Anaconda thin-wall copper tube specified for refrigeration and air-conditioning equipment must meet critical and realistic standards developed by Anaconda through a 10-year period of research in electronic testing.
Thoroughly reliable non-destructive testing is accomplished by using an eddy current device capable of detecting flaws such as lap seams, embedded chips, cracks, tears and fractures and automatically rejects unsound tube.
Our customers can be sure of a product of the highest quality, and tested to meaningful standards for refrigeration and air-conditioning applications. Additional details gladly furnished. Write Anaconda American Brass Company, Box 1031, Waterbury, Conn.
61-1010
ANACONDA®
AMERICAN BRASS COMPANY

You Asked About It

Edited by Hugh T. Mahar

Q. I have an oil problem on a Frigidaire unit. This is one of the old 5-horse twin-compressor type where the motor sits between the two compressors.

The problem is that the oil pumps from one compressor into the other. Always the same one. Sometimes it gets so low that it doesn't even splash. At times it equalizes itself. Sometimes the owner shuts it off and lets it equalize.

There is a ⅜-in. od line between the bottom of the two compressors. There is a ½-in. od pressure equalizer line at the top of the crankcase between the two compressors. A return from the oil separator ¼-in. od empties just above the oil sight glasses. The condensing unit is absolutely level.

This is on a locker plant having a 1¼-in. suction line, tees into 1-in. suction of equal length to the two compressors. I have checked both suction screens and they are clean. I have checked the valves in both compressors—both discharge and suction. Thinking possibly one compressor was pumping more oil, I returned all oil from separator to trouble compressor. This did not help. This is a water-cooled unit, running 120 lbs head pressure and an average of 2 lbs back pressure, identical on the two compressors with Refrigerant-12.

I would like to hear any suggestions and comments to help with this situation.

CTP—Iowa

●

A. It is well known that one pound pressure will sustain a column of water 28 in. high. Since the specific gravity of oil is about .9 then one pound pressure will sustain a column of oil 32 in. high or one ounce pressure 2 in. high. Applied to our problem, a difference of a mere one ounce will create a difference in the oil level in the crankcase of 2 in. approximately. On a 5-hp twin compressor unit this is a difference that is considerable.

Looking through Frigidaire's condensing unit specification sheet ACGA-47 dated October 1948, page 47, it states clearly that the gas equalizer line between the crankcases should be no smaller than ⅞ in. od for 5 hp to 25 hp inclusive. You say that your troublesome unit has only a ½-in. od gas equalizer line. It would seem that this size is somewhat small. Regardless of this, our problem is to find the cause of this uneven pressure in the crankcase.

There are two possible causes. One is excessive blow-by from broken discharge valves on one compressor, and the other a badly leaking oil separator needle. Since you state that you checked the discharge valves, it would be advisable to take a look at at the separator. Being an old condensing unit, the needle and seat may be worn badly or for that matter, the float mechanism may have become detached due to its age and excessive vibration. You do not state clearly where the ¼-in. od oil return line from the oil separator was attached. Assuming that it was connected in such a manner that the discharge from the vibrator entered one crankcase, the excessive blow-by from the separator could conceivably raise its pressure a couple of ounces over the other crankcase — during the running cycle.

This is a tricky problem, and like most of them, can best be solved by an observer on the spot. However, you should check the separator, and again the discharge valves, the oil equalizer line for obstruction by scale or sludge, and finally increase the size of the gas equalizer line if no defects are found in the aforementioned components.

Wm. Pollock,
Service Mgr.,
Temprite Products Corp.

Edmund E. Allyne Dies

CLEVELAND — Edmund E. Allyne, who developed an absorption-type refrigeration unit utilized by Sears, Roebuck & Co. in its refrigerators, died recently in Hanna House of University hospitals, at 86, following a long illness.

Cryo-Engineering Co. Formed by Barday

WEST CHESTER, Pa.—A refrigeration and low temperature consulting and manufacturing service, Cryo-Engineering Co., has been established here by Donald J. Barday, formerly with du Pont's "Freon" Products Div. as a refrigeration engineer.

D. J. Barday

Noted as the co-author and technical editor of the "Freon" Products Div.'s service manual on "Freon" in refrigeration systems, Barday said his organization will offer a complete design service for manufacturers, contractors, and industrial users of refrigeration, solvent purification, recovery systems, and vacuum apparatus.

Cryo-Engineering will manufacture low temperature test equipment, will supervise the procurement and installation of equipment, and serve as consulting engineers on installations of clients' equipment.

Cryo-Engineering Co. has developed a unique method for eliminating the loss of solvent vapor, particularly the more volatile "Freon" solvent, from metal and fabric cleaning machines, it was stated.

Barday operated his own refrigeration repair service and owned and operated the Arapahoe Refrigeration Co. in Boulder, Colo., from mid-1946 until mid-1949 when he became a student instructor in air conditioning at the University of Colorado.

From 1953 until he joined du Pont in mid-1955, he was associated with the radiation laboratory of the University of California.

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RESIDENTIAL—COMMERCIAL
27 MODELS FOR EVERY TYPE OF HEAT AND EVERY NEED
Walton LABORATORIES, INC.
1186 Grove Street
Irvington 11, New Jersey

1908

"DON'T FORGET... to empty the ice box pan"

Did you ever forget? If you did, a sopping wet floor made remembering easier the next time.

But even when home food storage was built around a wooden ice box, Frick was already pioneering in industrial refrigeration. It was the kind of pioneering that helped make today's frozen food industry possible.

1961

FRICK FOOD STORAGE PROGRESS

Freeze-drying—a revolutionary new method of food preservation—was developed with the aid of a custom-engineered Frick refrigeration system. Food is dehydrated in a vacuum chamber at –40°F at the Food Machinery and Chemical Corporation's new test plant in San Jose, California. The excellent results in this new process promise sweeping changes in the entire food industry. This is another example of Frick special application engineering that has been a quality symbol for more than a century.

FRICK COMPANY, Waynesboro, Pennsylvania

FRICK OF CANADA, Ltd., 2085 City Councillors Street, Montreal, Quebec

A proud past . . . a progressive future FRICK

Heat Pump Uses Only Centrifugals, Outside Air As Primary Heat Source

ALL-CENTRIFUGAL heat pump system at Masland Duraleather Co.'s plant in Mocksville, N. C. where vinyl upholstery and wall coverings are made. Carrier hermetic centrifugal refrigerating machine at right has 80 tons' cooling capacity and provides chilled water for process cooling year round. In winter, absorbed heat from the process—almost half the plant's heating requirements—is supplied to the open-type centrifugal at left, which obtains additional heat from outside air. Its 200 tons' cooling capacity handles summer requirements of the factory-warehouse.

MOCKSVILLE, N. C.—Engineering details on a heat pump system using only centrifugal refrigerating machines and outside air as the principal source of heat were released recently by Robert G. Werden, consulting engineer on the project.

The system is installed in the new 140,000-sq ft factory-warehouse of the Masland Duraleather Co. here. As reported in the May 29 issue of the NEWS, page 6, it is claimed to operate at about half the cost of separate heating and air conditioning equipment.

The system employs two Carrier centrifugal machines. One open-type unit of 200 tons' capacity can cool the major portion of the plant and, by using outside air, can provide more than half the heat.

TWO-CELL Carrier cooling tower which is adjacent to the electrically-driven centrifugal heat pump machines for transferring heat in or out of the building, is used year round. In summer, heat within the building is rejected by the tower to the atmosphere. In winter, heat absorbed by a brine solution from outside air, is the principal source used by the heat pump system to heat the building.

The other, a hermetic type unit of 80 tons' capacity, provides chilled water the year-round for use in manufacturing vinyl upholstery and wall coverings. In winter, heat absorbed from the process by the chilled water also helps heat the one-story building.

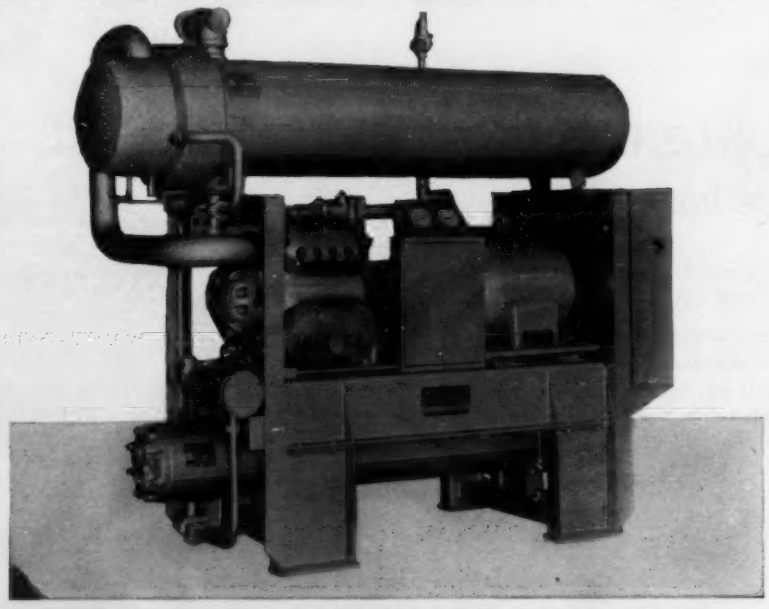
Four fan-coil "Weathermaker" units located on platforms suspended from the ceiling condition and distribute air to the factory. Two similar units without cooling coils heat the warehouse.

Smaller areas in the $1.5 million plant, such as the "in process" warehouse, the mix and cleaning areas, the "constant temperature room," and offices, are handled by individual systems, some of which are packaged heat pumps.

Conditions of 80°F and 50% relative humidity in summer and 72° in winter are maintained in the two main areas of the plant which are served by the centrifugal heat pumps. In winter, the natural relative humidity is acceptable, and therefore not a problem.

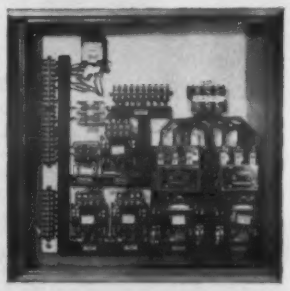
Low annual operating cost was a major factor in Masland's decision to install a heat pump system rather than the more conventional separate heating and cooling equipment.

While first costs of equipment for the two methods were about



BELL & GOSSETT specifies Furnas Electric Controls

Rigid performance standards set by Bell & Gossett demand that only highest quality components be used in their equipment. For this reason Furnas Electric starters and contactors were chosen for B & G Package Liquid Chillers. These controls assure dependable operation and top-quality performance.



Furnas components in this B & G electrical control panel are mounted, wired and interlocked for trouble-free automatic operation.

In-between sizes, dual voltage coils, silver-cadmium oxide contacts and other popular Furnas features make Furnas controls well suited for your air conditioning and refrigeration requirements. Compact construction, front accessible wiring terminals and uniform mounting dimensions make them highly adaptable to simplified panel mounting.

Write today for full information—
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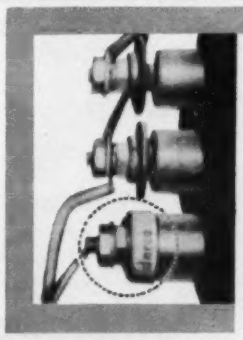

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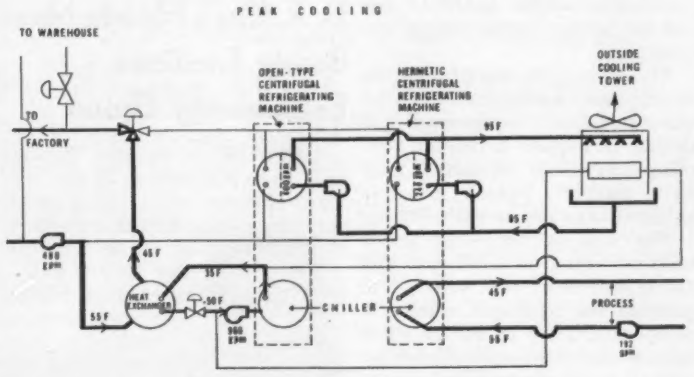


SCHEMATIC DIAGRAM of all-centrifugal heat pump system during summer operation (l.) and during winter operation (r.). Heavy lines indicate flow of water and brine. In left diagram, heat exchanger is shown at left of two centrifugals rather than in its actual location for simplification purposes. In right diagram, there are actually two lines to the two-cell cooling tower but only one is shown for simplification purposes.

the same, an analysis indicates the heat pump system will provide both heating and cooling for about $4,500 a year less than the cost of operating separate heating and cooling equipment.

The cost study was made for Masland by William F. Lotz, Inc., Philadelphia engineering and construction firm which also designed and supervised construction of the plant. Valley Engineering Co. of Glenside, Pa., served as associate to Lotz in designing the heat pump system.

How Brine System Takes Heat from Outside Air

Another factor influencing the decision was the development by Carrier Air Conditioning Co. of a satisfactory method for extracting heat from outside air at low temperatures which made it practical to use large capacity refrigerating machines as heat pumps, according to Robert G. Werden, consulting engineer.

This was accomplished at Masland by locating a layer of finned brine coils, six rows deep with eight fins per inch, above the condenser water distributing header in each cell of a two-cell Carrier cooling tower.

By installing the brine coils inside the casing of the tower normally used only in summer and using the tower's two fans to pull air over the coils year-round, engineers were able to improve the efficiency and economy of the system, he said.

To prevent excessive frosting of coil exteriors and to insure heat flow to the building, the coils in each cell are defrosted alternately. A pressure sensing device across the brine coils automatically stops one of the fans and the flow of brine and signals for 80° defrost water from a tank in the equipment room.

At the signal, 2.7 gpm of defrost water per square foot of coil surface is sprayed over the coils for two minutes before they are again ready to absorb heat from outside air.

A special grade of trichlorethylene brine which retains its low viscosity at low temperatures is circulated without added pumping power through the outside brine coils. Also, the heat transfer properties of this brine do not become inhibited at low temperatures.

Only Two Knobs Control System

Only two knobs are required to control operation of the system. One knob, when set at "occupied" or "unoccupied," regulates conditions during the two work shifts and during non-working hours. The second knob governs the summer load on the larger of two centrifugal machines by regulating its compressor speed.

In summer the bigger, open-type centrifugal cools 960 gpm of brine from 50° to 35°. The brine is pumped to a heat exchanger which chills 480 gpm of water from 55° to 45°, before it is circulated to the plant air conditioning apparatus. The brine-to-water exchanger is 16 ft long, 30 in. in diameter, and has a design working pressure of 150 psi.

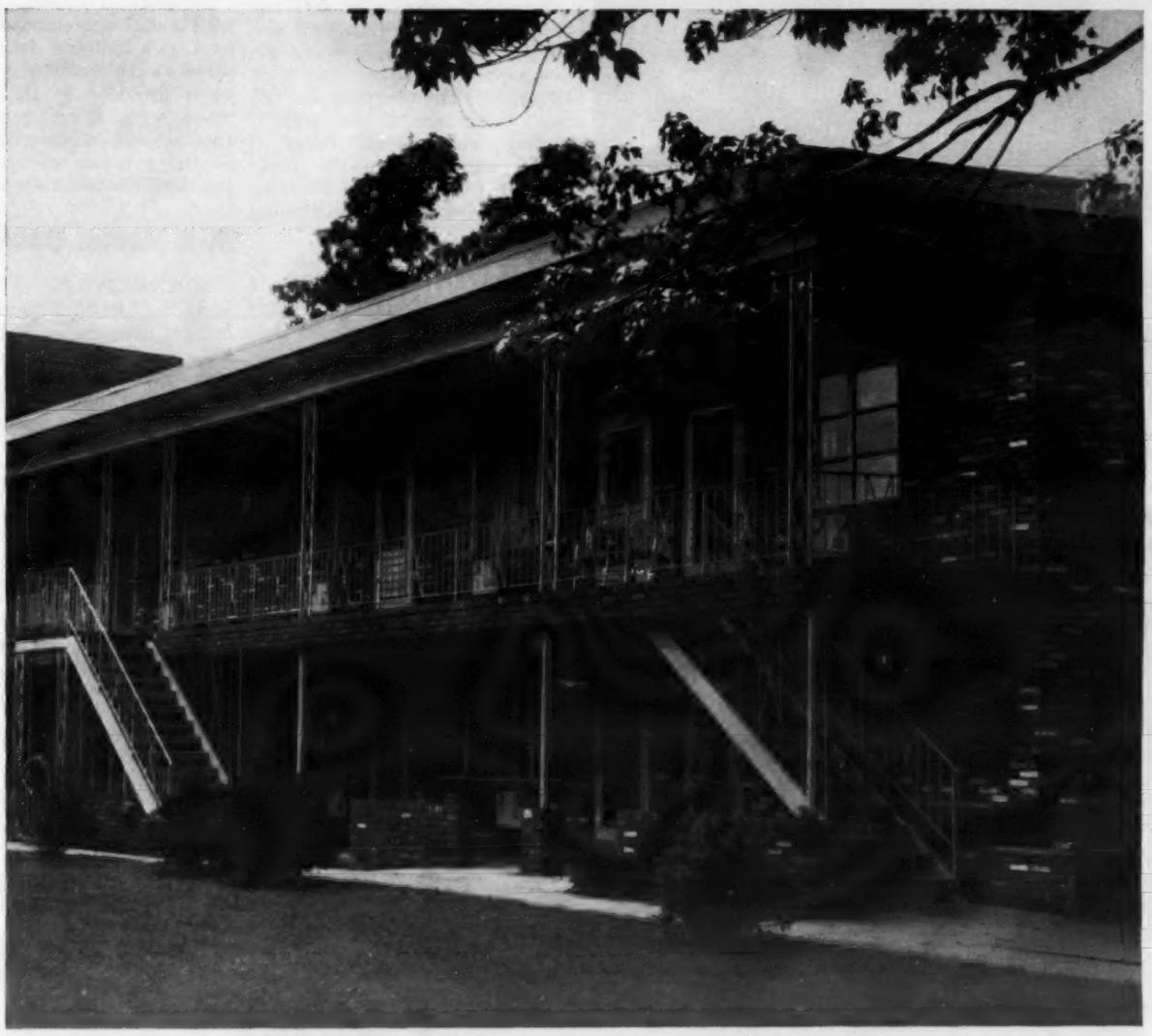
Since North Carolina temperatures rarely dip below 10°F that temperature was used as the base for design conditions when peak heating is required.

Brine, which circulates in winter between the cooler of the refrigerating machine and the outdoor coils in the cooling tower, carries heat from 10° air to the open-type centrifugal.

In giving up its absorbed heat, the brine is cooled from -1.1° to -7.7°. This heat, plus that from the manufacturing process, and heat generated by the two compressors in compressing refrigerant, produces 500 gpm of hot water at 95° for circulating to plant air handling equipment.

Heat from the process, which is rejected to the atmosphere in summer, amounts to 1,200,000 Btuh or nearly half the 2,851,000 Btuh needed to warm the building in winter. The only practical way this much heat could be reused during cold weather was with a heat pump system, Werden said.

(Continued on next page)



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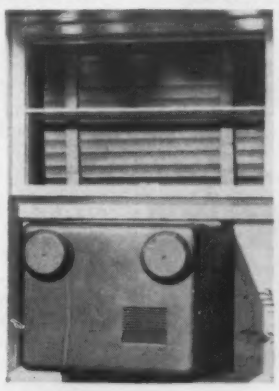
Suburban Novent and Dynavent Gas heaters give you all the advantages of modern gas heat . . . high efficiency, precise control, speed, cleanliness, economy and dependability of supply. Gas can be the answer to your unusual or everyday heating problems. Heat better for less with Suburban Novent or Dynavent Gas heaters. For complete information, contact your local Gas Company, or write to Suburban Appliance Co., Dept. AN 1061, Morristown, New Jersey.

American Gas Association



Right: These units are installed at the Price Apartments, Nutley, New Jersey (shown above). Each apartment is individually heated to exactly the temperature desired by the occupants.

FOR HEATING... GAS IS GOOD BUSINESS!

All-Centrifugal Heat Pump System at Masland--

LARGE DUCTS evenly distribute conditioned air throughout Masland Duraleather's $1.5 million plant in Mocksville, N. C. Warm and cold water, supplied by the world's first heat pump system consisting of only two centrifugal refrigerating machines, is piped to six big Carrier Weathermaker air conditioning units like the one at center located on a platform suspended from the ceiling.

(Continued from preceding page)

For the process load, the hermetic machine supplies 192 gpm of chilled water at 45° to a machine which adds a strengthening cloth to vinyl strip used for upholstery, and which prints one of thousands of different designs on the vinyl.

The design is fused into the strip by passing the vinyl through a series of 10 rollers which are heated to temperatures ranging from 150° to 300°.

The design is then set by quickly chilling the vinyl strip, passing it through a spray and over several large rollers, called "cans," which contain chilled water. The chilled water constantly flows through the cans to maintain the exact temperature desired.

Condensers Contain Two Separate Tube Bundles

Except for the condensers, the two chillers are standard machines. The condensers contain two separate tube bundles, each two-pass. The purpose of the dual condenser is to prevent fouling which could occur if water was sent to the plant through tubes used the previous season by water in the cooling tower circuit.

Each tube bundle is used by the same type fluid, e.g., in summer, heat from the process load is rejected through one tube bundle to condenser water circulated to the cooling tower.

In winter, process heat is transferred through the other tube bundle to the water system circulating warm water to the building's air conditioning apparatus.

The open-type centrifugal machine uses Refrigerant-11. Its three-impeller compressor is driven through a hydraulic coupling and speed increasing gear by a 480-volt, 3-phase, 60-cycle squirrel cage motor with 300 hp.

The size of the single-speed motor turning at 1,750 rpm and the compressor were selected to provide the system's maximum temperature life in winter when taking heat from cold outside air up to a point where it will create a satisfactory atmosphere for people working in the factory.

In summer, when the temperature differential is not as great, the compressor runs at slower speed.

The hermetic centrifugal uses Refrigerant-113. Its 480-volt, 3-phase, 60 cycle squirrel cage motor with 105 hp is directly connected to the two-impeller compressor.

Economical operation of the heat pump system was abetted by Lotz's building design which provides an extremely low "U" value provided by the masonry walls with brick veneer, and roof of 1½-in. fiber glass and poured gypsum covered by felt, tar, and gravel.

M-H Names Dowidchuk

MINNEAPOLIS — Appointment of Paul Dowidchuk as market manager of Minneapolis-Honneywell's Commercial division sales to the U. S. government has been announced by Ralph Crysler, division sales manager.

D. R. Knox Heads New Bundy Facilities Engineering Group

DETROIT — Bundy Tubing Co. has appointed David R. Knox director of facilities engineering as a part of its reorganization of the engineering function into two groups —Facilities Engineering and Research and Development.

D. R. Knox

The move was announced by Wendell W. Anderson, Jr., president. Knox has been with Bundy since 1932 and formerly was manager of the Nine Mile Rd. plant, Warren, Mich.

"This reorganization will enable Bundy to take greater advantage through research of new products, new materials, and advanced techniques," Anderson said.

The Facilities Engineering group is responsible for maintenance of engineering and fabrication standards as well as product quality control.

Bradley J. Radike, formerly of Chrysler Corp., is product quality control manager. Stanley Gondek, with Bundy since 1947, is chief development engineer.

NEWS readers are invited to write to the editor giving their opinions on any subject of interest to the industry.

MINIMUM INVENTORY— GENEROUS PROFITS

Service Air Conditioning Controls with Identical Parts Used in Original Equipment

Only 20 starting relay kits will replace 355 various items.

Only 19 control relay kits will replace 142 various relays, contactors, controllers.

Same-day-shipment on parts ordered from RBM Chicago warehouse.

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RBM REPLACEMENT KITS

For the first time, RBM offers kits for direct replacement of the magnetic controls it has engineered and built as original equipment for all major air conditioning manufacturers. Their requirements have been consolidated into a few replacement kits. This, plus same-day-shipment of orders from the Chicago warehouse stocks, keeps your inventory down. Because RBM original equipment and replacement controls are manufactured on high volume production lines, costs are low . . . and you benefit from the saving in generous profit margins.

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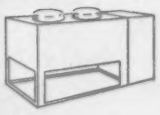

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"A" COILS

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Remote Condensing Units from 2 H.P. to 20 H.P. Remote Heat Pumps from 3 H.P. to 10 H.P.

Self Contained Package Air Conditioners and Heat Pumps in 2, 3, 4, and 5 H.P. with matching Electric Duct Heaters. You'll like the merchandising program designed to help you sell.

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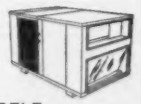
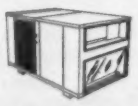
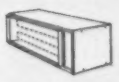


SELF CONTAINED PACKAGE

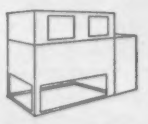
REMOTE HEAT PUMPS



PACKAGED HEAT PUMPS

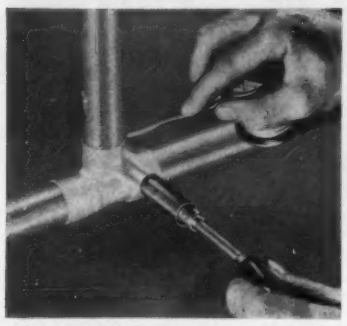


ELEC. DUCT HEATERS



COMMERCIAL HEAT PUMPS

Nibco Announces Pre-Cleaned, Pre-Fluxed Wrot Copper Fittings



COLOR-GUARD fitting has micro-coating of tin that prevents oxidizing, promotes capillary action to improve solder flow.

ELKHART, Ind.—Nibco Inc. has begun the manufacture of cast bronze and wrot copper fittings that are chemically cleaned of oxidizing elements, protected with a micro-thin coating of tin, and pre-fluxed before they ever leave the Nibco plant.

According to Paul Nankivell, Nibco vice president of sales, the new line of "Color-Guard" fittings makes it possible to install copper piping better, faster, and at lower cost.

Although the Color-Guard line is being marketed at an additional 6%, Nibco claims, and shows by field test figures, that the easier, faster installation actually saves the contractor money.

In addition to acting as a barrier to prevent copper from oxidizing, the micro-coating of tin promotes capillary action to improve the solder flow and insure a proper bond, the company explains.

The tin coating of Nibco's Color-Guard fittings also increases the tensile strength of cast fitting joints by 30%, making cast joints as strong as wrot.

Nibco states that the new Color-Guard fittings can be stored indefinitely under normal conditions and still insure bonding without additional cleaning or fluxing since the rosin flux has an indefinite life span.

To support its savings claims, Nibco cites results of a field test by William Rinehart, a plumbing contractor in Columbus, Ohio. Rinehart tested the fittings on seven school installations.

According to his job cost estimate, it takes 60 seconds to clean the end of a half-inch solder cup, 75 seconds for a three-quarter inch, and 90 seconds for a one-inch.

With overhead and fringe benefits figured in, it costs him 12½ cents for every 60 seconds' work in installing a half-inch elbow for which he pays 7.3 cents.

By purchasing a Color-Guard fitting at 7.7 cents, he saves 60 seconds on each end by not having to clean it. That figures out to 25 cents saved for an additional .4 cents cost, not including time saved by no longer having to flux the fitting.

The company has prepared a six-page folder on the Color-Guard line which contains a laboratory report concerning soldering; types of fluxes and their applications; the results of tensile tests on tinned and regular cast fittings; and the rate of capillary action on regular versus tinned fittings.

The folder also contains a detailed case history of a Color-Guard installation that shows the relative costs of non-tinned and Color-Guard half-inch elbows.

The descriptive folder and a Color-Guard test fitting are available from Nibco wholesalers or from the manufacturer.

CRAW's Marshall Named ARW Director

CLEVELAND—William J. A. Marshall, president of Marshall Refrigeration Co., Ltd., Toronto, Ont., Can., has been elected to serve as a member of the board of directors of Air Conditioning & Refrigeration Wholesalers for a three-year term.

Marshall

This election follows the announcement made recently of the affiliation of the Canadian Refrigeration & Air Conditioning Wholesalers with ARW.

CRAW represents 33 wholesale locations throughout Canada and Marshall will represent these locations on the board. Combined membership of CRAW and ARW now totals 523 locations throughout the world.

Marshall has a long experience in the refrigeration and air conditioning field. He was in the service and contracting business from 1928 to 1941 when he founded his present company. During this time he has actively engaged in industry activities and association functions.

He is presently president of CRAW's Eastern Section and vice president of the Canadian Refrigeration & Air Conditioning Association.

For Your Reprint Copy

"Emergency Diagnosis, Repair of Hermetic Unit Electric Components," by John L. Zant, mail this ad with your name and address to: Air Conditioning, Heating & Refrigeration News, 450 W. Fort, Detroit 26, Mich.

Only 25¢ each.

Ray Edwards Answers Some Questions On:

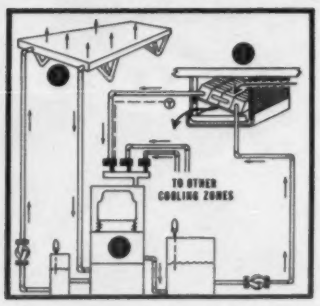
AIRVEC...AN AMAZING COOLING SYSTEM THAT PAYS OFF IN SILENCE AND LOW MAINTENANCE!

Q. I've heard about Airvec. What does it mean?

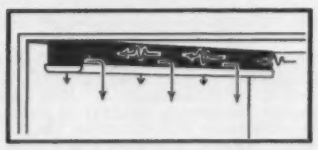
A. The Edwards Airvec System completely eliminates the noise associated with thru-the-wall and other fan—coil air conditioners. Noisy air-conditioners in apartments, motels and commercial buildings are a nuisance and can be money-losers. Motel operators, for instance, lose patronage. Office or factory employees don't work as well.

Q. How does Airvec work?

A. Let me draw you a sketch. Edwards Airvec Chilled Water System consists of (1) a packaged zoned chiller connected to (2) silent gravity room cooling coils. The chiller heat is rejected thru (3) the external Airvec condenser. Here's a schematic sketch of the piping layout.



Inside the rooms of the building to be cooled, inconspicuous valances near the ceiling hold the two or four tube system, through which is piped the chilled water. The valance looks like this:



Q. Do you put it near the ceiling because cool air drops?

A. Of course, and the result is gentle, draftless cooling, moving by convection alone, no rush of air forced out by noisy fans.

Q. What about maintenance?

A. There are no fans, no belts, no need to lubricate, no air filters, no cooling towers. The elimination of these unnecessary devices alone represents a substantial saving over the years.

Q. Anything else we should know about the Edwards Airvec System?

A. Yes. You should know about Zone Control. Temperatures in each room, apartment or area can be individually controlled for the comfort of the occupant by means of inexpensive Edwards Zone Valves.

Q. Is this another Edwards first?

A. We think it is. We are emphazing the idea of a completely packaged cooling system with silence and low maintenance as prime objectives. In cooling and heating, remember, we *engineer* our products — that's why we stress the word "Engineering" in our corporate name.

Q. Can I get more details?

A. Certainly. Just fill out the coupon below and we will rush you special descriptive sheets on Airvec and a sheet on our "Zone-Controlled" heating system. We will help you lay-out your jobs, too.

EDWARDS ENGINEERING CORP.

Pompton Plains, N. J.
TEmple 5-2808

PACKAGED HEATING AND COOLING THROUGH YOUR CONTRACTOR

YES, SEND ME YOUR LITERATURE ON:

☐ Airvec System
☐ Zone Controlled Heating
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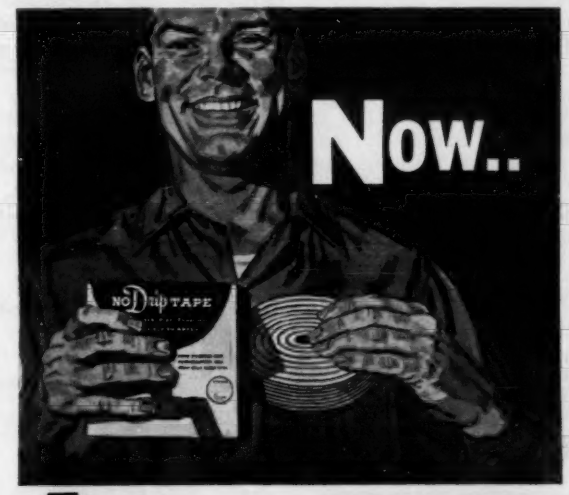
Whirlpool Expects Improved 2nd Half

BENTON HARBOR, Mich.—A last half sales volume equal to the second six months of 1960 is anticipated by Whirlpool Corp. in its quarterly report to stockholders.

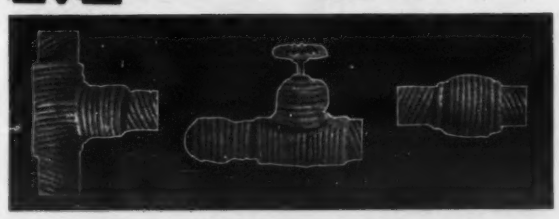
The manufacturer said that a sales improvement during the second half was already indicated by an upturn in volume achieved late in the second quarter.

Net sales for the six months ended June 30 were $205,267,602, a decline of nearly 7% from the $220,552,247 of the similar 1960 period. Net income of $4,833,054 was equal to 72 cents per common share, compared with $7,578,139, equal to $1.15 per share, for 1960.



1 INSULATION FITS EVERY SIZE PIPE... ANY TYPE FITTING

Mortell NoDrip TAPE



No tools. No vapor-seals, no fasteners, brads or adhesives. Wrap NoDrip Tape spirally around any size pipe, joints, tees, valves, angles . . . and the job's done! NoDrip Tape is a pliable, cork-filled, self-adhering product. Forms a *permanent* air-tight, 100% vapor- and moisture-proof jacket. Stops condensation drip, sweating, frost. Ends rust and corrosion.

MORTELL NoDrip PLASTIC COATING

. . . For big areas, large pipes, tanks, air ducts. Another fine Mortell refrigeration product. Applies with brush or trowel to metal, concrete, brick, plaster, tile or composition surfaces. Permanently stops condensation, rust, corrosion.

Mortell COMPANY

Makers of Mortite Caulking Cord and Mortite Caulking Gum

Mortell Company
549 Burch St., Kankakee, Ill.
Please send full information about the complete line of Mortell refrigeration products.
I am a Jobber ☐ Dealer ☐ Serviceman ☐
Name _____
Firm _____
Address _____
City _____ Zone ____ State _____

Transistorized Controls Govern Dual Duct System In Maytag Bldg.

NEWTON, Iowa — Complete year-round air conditioning, operated by transistorized controls, and electrostatic filtering are features of the new Maytag Co. headquarters building here that houses everyone with company-wide responsibility except the research and development division. That division is housed in a separate building across the street.

Two Carrier 331-ton compressors power the air conditioning system that sends both hot and cold air in separate ducts to 261 points of dispersion. There it is mixed to provide a 76°F temperature, under design conditions, with relative humidity ranging from 35 to 50% winter and summer.

There are 1,000,000 sq ft of air conditioned space in the two-story and basement structure. Two-thirds of it is new building while the remainder is the old office building, completely renovated to conform with the addition.

Purpose of the new structure, adjacent to Maytag's plant No. 1, is to centralize all company-wide functions under one roof for better communication and coordination.

More than an office building, it also includes engineering departments and specialized laboratories not normally found in a building of this type. More than 500 persons are currently working here.

NOTE HOW ceiling outlets are grouped in sets of four so cooling can be provided in each 10 by 12-ft area regardless of partition arrangement in new Maytag headquarters building in Newton.

There are no permanent inside walls in the building, except for a central core containing stairwells, elevators, and restrooms. All other walls, including the inside exterior walls, are formed with easily movable panels.

Each ceiling is suspended 3 ft from the bottom of the floor above and is made of vinyl-covered glass fiber pads suspended on a series of aluminum T-bars.

The resulting enclosed area accommodates ventilation ducts, fluorescent lighting fixtures, electrical conduit, plumbing, sprinkler system, and zone controls.

4 Outlets In Each Zone

Basically, in the open office areas, each zone is served by a set of four outlets. At each of these points, the incoming warm and cold air is mixed in the proportions called for by the regulatory control device servicing that area.

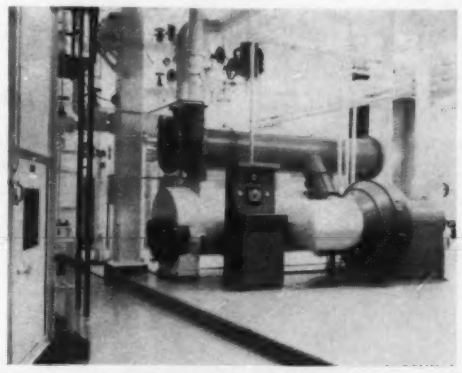
This sensing element, located inside the exhaust register, "feels" the temperature of the returning air and sends a signal to an automatic transistorized control. This activates a motor which adjusts the dampers in the warm and cold air ducts to supply more warm or cold air as required in the particular zone.

The Minneapolis-Honeywell electronic controls are located above the suspended ceilings in the building. Transistors rather than vacuum tubes are used in the controls because the tubes tend to give off heat, require more frequent replacement, and take up more space. The use of transistors solves each of these problems.

Some Areas Use Wall Thermostats

In some areas such as the auditorium, laboratories, quiet rooms, executive offices, and conference rooms, temperature is regulated by wall-mounted thermostats.

The 193,892 cfm of air that is supplied to the various zones comes from the equipment penthouse atop the building. Fresh air, 36,515 cfm, from outdoors is taken in and passed through a pre-filtering system. Then it is mixed with the recirculated air from the return ducts and passed through American Air Filter Co. electrostatic filters to remove dust, pollen, cigaret smoke, and other impurities.



ONE OF TWO 331-ton air conditioning compressors mounted in the penthouse on the Maytag building. Master panel controls all equipment functions here with minimum of human supervision.

At this point, part of the air passes through cooling coils to the "cold deck" and the remainder through hot water coils to the "hot deck."

During the winter, steam is added to increase the moisture content, and in warm weather, excess moisture is removed by pre-cooling the incoming air from outside. The two supplies of air — warm and cold — are then delivered through the ducts to the individual zones in the building.

Some areas of the building — among them the restrooms and laboratories—are served by air-return ducts which exhaust the air directly to the outside rather than recirculate it.

Master Panel In Penthouse

All of the heating, cooling, humidifying, dehumidifying, and mixing functions carried on in the penthouse are controlled by a master panel located there. The work is done automatically by Minneapolis-Honeywell electric controls and requires a minimum of human supervision.

The same penthouse master control panel also has provision for remotely reading the temperature in key zones located throughout the building.

Of these zones, there are 33 which have remote temperature regulation as well as set point adjustment with wall-mounted thermostats. Twenty other zones have the remote temperature indication.

This system enables the penthouse operator to determine the general performance of the entire system. William E. Nanes of Des Moines was the consulting engineer on the ventilation system.

Corn State Metal Fabricators, Inc. of Des Moines installed the sheet metal and air conditioning.

75 Tons of Heat Pumps Serve Carolina Motel

MOREHEAD CITY, N. C. — Year-round air conditioning of the new 64-unit Buccaneer motor lodge on Arendell Dr. here is provided by 75 tons of Tempromatic heat pumps, the manufacturer has disclosed.

The motel units are served by two 30-ton Tempromatic water-to-water heat pumps. Each heat pump uses 120 gpm of 68°F well water as the heat source.

Individual room control consists of a wall switch which modulates the speed of the blower in the room convector. Cooling capacity for each motel unit is up to 8,000 Btuh.

Two more heat pumps serve the office, lounge, and restaurant of the motel. One is a 10-ton unit, the other a 5. These are water-to-air units.

Carolina Power & Light Co. was active in promoting and assisting in the installation.

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LINE VOLT—Test light checks presence of power in line, identifies AC or DC, grounded components, etc., over 55—550 VAC or 90-600 VDC range. List Price $1.50.

MINI-VOLT—used by repairmen, experimenters, technicians, handymen. Indicates even 2 or 3 volt line drop, measures exact voltage from 65 to 660 volts, identifies a-c or d-c lines, checks rectifiers, filter capacitors, chokes, fuses, d-c polarity, etc. Draws negligible current. Throw in tool case—abuse-proof construction. Guaranteed for 10,000 hours operation. At your distributors or f.o.b. factory $3.75.

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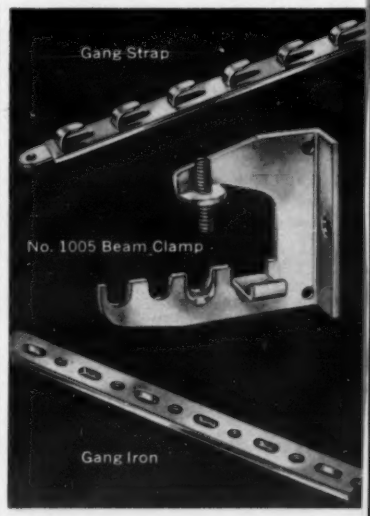

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Strap will support six ¼" O.D. tubes, or us in multiple for more than six ¼" tubes. C also be used in combination with No. 1 Minerallac Jiffy Clip for supporting five ¼ O.D. tubes and one ⅜" O.D. tube. Made of Gauge U.S.S. cold rolled steel, one-half ha zinc plated. Available in 6" and 30" lengths.

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Airtemp Promotes Lynch; Gallagher Succeeds Him

DAYTON—Donald C. Lynch has been appointed sales programming manager of room air conditioners for Chrysler Corp.'s Airtemp Div.

D. C. Lynch

T. W. Kirby, vice president-marketing for Chrysler Airtemp, announced the transfer and said that Paul J. Gallagher would succeed Lynch as district manager for room air conditioners in the eastern region, with headquarters in New York City.

Gallagher

Gallagher is a former district sales manager for Columbia Phonographs, a division of the Columbia Broadcasting System. His territory with Chrysler will include the New England states and New York, Pennsylvania, Delaware, New Jersey, Maryland, and Virginia.

Whirlpool Puts More Items on 'Open List'

BENTON HARBOR, Mich.—Whirlpool Corp. announced an end to suggested list prices on its "RCA Whirlpool" home appliances.

Jack D. Sparks, vice president of sales, said the action extends to refrigeration, laundry, and specialty products the same "open list" policy that has prevailed for some years on air conditioners and built-in and free-standing ranges.

"We believe," said Sparks, "that our suggested list prices have always reflected the true retail worth of our appliances. However, increasingly intense competition during recent months has had the effect of widening the gap between true worth and the going price.

"Since this trend show no sign of abating, it appears that suggested list prices will lose all remaining value as a measure of worth. Accordingly, we will no longer suggest retail prices for any of our products."

Gas Station Patrons Can Order Air Conditioner with Fill-Up

GREENSBORO, N. C.—It is now possible to buy air conditioners and refrigerators in a service station due to an experiment being conducted by Montgomery Ward and Pure Oil Co.

The two companies have agreed upon a plan of merchandising, as a test, whereby Montgomery Ward has opened order offices in three stations, two in Illinois and one here. A fourth is being contemplated at Lakeland, Fla.

Under the plan, Montgomery Ward opens an "order" counter in the service station and advertises the fact that merchandise in the mail order firm's catalog may be ordered either by telephone or in person.

The orders, when received, are dispatched to a Montgomery Ward distribution center and the merchandise is delivered to the station within 48 hours. The customer may either pick it up at the station or have it delivered to the home for a nominal fee.

At the Greensboro Pure Service Center, Montgomery Ward erected a large display room beside the station's main building and displayed heavy merchandise, including refrigerators. The order counter is located on the inside of the station where a young lady handles the orders.

First Group Reaches Fedders' 'Shangri-La'

MASPETH, N. Y.—The first contingent of retailers and distributors in the 1961 Fedders Corp. sales incentive vacation arrived Sept. 5 in "Shangri La, USA" — St. Croix, Virgin Islands.

Approximately 80 Fedders room and central air conditioning retailers and wholesalers from the Dallas area were in this first group to arrive in St. Croix.

Between now and November, some 4,000 retailers and distributor representatives will spend a week's vacation with Fedders.

The chartered Pan American DC6B's will leave major cities in the United States three times each week flying directly to St. Croix.

The 1961 trips mark the tenth anniversary of the Fedders sales incentive vacation. In the past 10 years, some 20,000 Fedders guests have enjoyed holidays in Israel, Paris, Rome, Acapulco, Jamaica, Nassau, and elsewhere.

Tries Rental Market

HAMILTON, Ont., Can.—Hill Marine here is developing plus business in air conditioning by offering to rent, as well as sell, room air conditioners.

The store rents air conditioners for as little as $8 per month on an annual basis, directing its promotional efforts at offices as well as homes.

Schedule Report on NEMA Certification

NEW YORK CITY—A progress report on the NEMA Room Air-Conditioner Section's certification program is among events scheduled for the 35th annual meeting of the National Electrical Manufacturers Association, to be held at The Plaza hotel here on Nov. 16.

The report will be presented during the morning business session.

Bermuda Prepares For York Invasion

TUCKER'S TOWN, Bermuda —John C. Fischbeck, II, president and general manager of the Castle Harbour hotel, met with representatives of York Corp. and Pan American Airways recently to finalize arrangements for the October arrival of approximately 1,400 York dealers and distributors.

All prize-winners in a York sales-incentive campaign, each of the 1,400 was awarded a holiday trip to Castle Harbour hotel for outstanding sales performance.

Independents Replace 2 Admiral Branches

CHICAGO — Admiral Sales Corp. has announced the replacement of factory distributing branches in Oklahoma City and Washington with independent distributors wherever possible.

Appliance Distributors, Inc., has been named the new Admiral distributor in the Oklahoma area, replacing Admiral Sales Corp., Oklahoma City division.

Legum Distributing Co., Admiral distributor in Baltimore, was given the additional District of Columbia territory, replacing Admiral Sales Corp.-Washington division.

G-E Names Atchison Cooling Consultant

LOUISVILLE, Ky.—Leonard W. Atchison, formerly manager of engineering for room air conditioners, has been appointed to a new position — engineering consultant — in the General Electric Air Conditioning Dept., according to Carl W. Moeller, department general manager.

In his new assignment, Achison will work with the department's operating sections, which make both room and central units, providing counsel, guidance, and direction on common technologies and combination of components and end products.

William G. Spiegelhalter has been named to succeed Achison as engineering manager for room air conditioners.

Pop Decides—Mostly

NEW YORK CITY—The man of the house made the final decision on what brand room air conditioner to buy in 58% of the households acquiring this product new in 1959-60, according to a survey sponsored by *Look* magazine. The wife decided the matter in 16% of the households and they decided jointly in 18%, the study found.

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AIR CONDITIONING, HEATING & REFRIGERATION DIRECTORY will be a **REGULAR ISSUE** of the "News" starting this year!

For the first time since its inception in 1932, the Air Conditioning, Heating & Refrigeration Directory will be delivered to all Air Conditioning, Heating & Refrigeration News subscribers. Its cost will be included in regular subscription rates. As just one of the many News extra services to readers this year, the Directory will be published as the 52nd issue on December 25th.

No change in its handy, 6 x 9 book-size for table-top reference, the Directory will contain:

MANUFACTURERS SECTION – over 1,600 firms, including location, phone number, key personnel, products

PRODUCT SECTION – over 4,000 products in 971 product categories, with over 8,500 company cross reference listings

TRADE NAME SECTION – over 2,200 trade names, with manufacturer cross reference

WHOLESALER SECTION – over 1,000 separate companies *Plus* **TRADE ASSOCIATON SECTION – EXPORTER SECTION –**

This new procedure will be a boon to advertisers, too. It automatically increases the guaranteed circulation from 15,000 to over 21,000, and gives advertisers an accurate ABC audit of distribution. As in the past, the Directory will also be distributed at the national ARI Exposition in February and through wholesalers. All this, at no increase in advertising rates, either for advertisers already signed up, or those still contemplating space in the Directory.

If you're a reader, look for your bonus shortly after December 25th. If you're an advertiser, collect your bonus before the final closing date – October 2nd.

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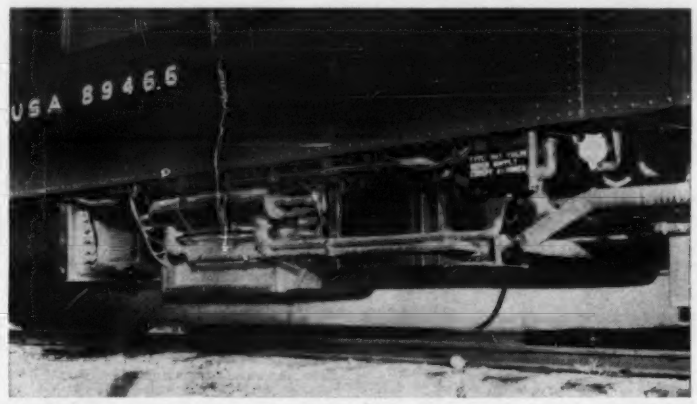

ICE BUNKERS were removed from beneath the missile rail cars and a Chrysler Airtemp 1209 condensing unit was installed and connected to a direct expansion water chiller. The condenser fan was moved from a vertical to a horizontal discharge location.

Cooling a Missile Train--

(Continued from Page 1, Col. 1)

and "nerve" cars, it was pointed out in a recently-released report by Chrysler Airtemp.

Ben F. Holbrook of Holbrook Co. in Ogden, Utah, acted as engineer and contractor for the air conditioning installation. Holbrook, who has been in business since 1955, terms it his most unusual challenge.

"The train gave us a few problems but we managed to finally solve them," Holbrook stated.

"We had to use an air-cooled chiller with a low silhouette and install it beneath the rail cars because of interior space restrictions."

In the "ready" car, Holbrook solved the challenge by removing the existing ice bunkers from under the car to make room for a Chrysler Airtemp 1209 condensing unit. The condenser fan was moved to a horizontal discharge and the standard top discharge hole was patched.

The condenser unit was connected to a direct expansion water chiller. Chilled water from this unit was then circulated through the existing fan coil that had been used with ice water from the old ice bunkers.

In the "nerve" car, which contains the missile computing equipment, Holbrook installed a condensing unit which was used with a Chrysler 1409 air handling unit.

According to Holbrook, the equipment satisfactorily passed tests in temperatures which exceeded 105°F.

Sometime in the future, SAC planners believe several trains carrying new Minuteman Intercontinental Ballistic Missiles will be moving almost constantly over the nation's rails.

With their long-range minuteman ICBM's ready for immediate launch in the event of aggression against this country, the missile trains would be safe from destruction in a surprise attack, since the enemy could not pinpoint their locations.

Holbrook's success with the mobile missile train resulted in additional jobs. He provided and installed the equipment in two SAC Radar Bomb Scoring trains. These trains are used in testing simulated bomb runs by manned aircraft.

Holbrook carries Chrysler's complete line of air conditioning equipment, from room air conditioners to central station equipment, and estimates that his business is evenly split between residential and commercial.

Holbrook is currently working on several other train projects, and if the Air Force continues to turn to trains, he may have to expand his business to keep up with defense work.

Solar Heat--

(Continued from Page 1, Col. 1)

residence, provided two-thirds of the energy required for heating and domestic water supply. The remainder was supplied by a conventional oil burner.

To do better than this, Prof. Albert G. H. Dietz, a member of the space heating committee of the M.I.T. solar energy conversion project, said, would be feasible, but to attain total solar heating in the random weather of New England requires more storage space than is convenient in a small house.

Under present marketing conditions, he added, the cost of mechanical equipment required for solar heating remains higher than can be justified by fuel savings.

Prof. Dietz reported on the project at the United National Conference on New (Non-Nuclear) Energy Sources in Rome, Italy, last month.

Prof. Lawrence B. Anderson, chairman of the project's space heating committee, said that its next research problems will be to devise cooling equipment to operate on solar energy for air conditioning and to investigate new combinations of materials for the construction of less expensive collectors able to withstand stresses of temperature and weather.

Prof. Dietz reported that the most valuable contribution of Solar House IV was the engineering knowledge gained in constructing and operating a complex solar heating plant.

"Somewhere and sometime this knowledge will be a resource," he said. "In countries where conventional fuels are abundant, the use of solar energy for heating is economically attractive only where the climate permits an unusually high yield of sunshine per square foot."

At Solar House IV, the 16 by 40-ft collector consisted of two layers of glass over an identical area of thin aluminum sheet painted black. It was set at an angle of 60°.

Water pumped through copper tubes attached to the aluminum sheet was heated by trapped solar energy and then stored in a 1,500-gal. tank in the basement.

Hot water from the tank was pumped through a heat exchanger to transfer heat from the water to air. The warm air was forced through ducts to heat the house, as in conventional heating systems.

Incoming cold water from the public water system was heated for domestic hot water supply by being pumped through coils in the storage tank.

In operation, temperatures within the house were very strictly maintained and the occupants at no time accepted any compromise with the comfort levels or volume of hot water use that Americans have come to expect, Prof. Dietz said. The house was occupied by the chief engineer of the project, Claremont D. Engebretson, former M.I.T. research associate in mechanical engineering, and his family.

During the three-year period, Engebretson kept a detailed record of performance of the system and gradually improved the installation until, in the 1960-61 winter, the heating plant operated at peak efficiency and satisfied the predictions of its designers.

Prof. Dietz noted that the flow of controlled energy in the Solar House system was distributed on a fully automatic basis. Regulating devices instructed the system exactly when energy could be picked up from the sun at the collector roof and told the auxilliary fuel burning heater precisely how long to wait before coming to the aid of a depleted store of solar energy.

To accomplish this required greater complexity of piping, valves, pumps, and especially control devices than is ordinarily found in a small building, and maintenance of such a system is also an economic factor in solar heating.

American-Standard Controls Names Spivey

DETROIT — Appointment of Harvey V. Spivey of Atlanta to the Marketing Dept. of the American-Standard Control Div. has been announced by J. F. Warnock, vice president - marketing.

H. V. Spivey

Spivey has been named sales representative for Detroit refrigeration controls in eastern Tennessee and the six-state area of Mississippi, Alabama, Georgia, Florida, North Carolina, and South Carolina.

How to balance air conditioning, heating and ventilating systems with the **NEW**

PUSHBUTTON ANEMOTHERM AIR METER

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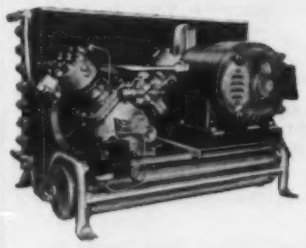
SUPERMARKET OWNERS GIVE FOUR REASONS FOR CHOOSING OPEN TYPE COMPRESSORS

In the first part of a study recently published by *Air Conditioning, Heating & Refrigeration News*, a 107-store supermarket chain revealed these reasons for preferring open type equipment:

- Much longer life
- Closer balance between high and low sides, with more satisfactory operating conditions
- More universal applicability—wide range of capacities; compressor displacement adaptable to new load conditions
- Unsurpassed service history according to actual records

FOUR REASONS WHY SUPERMARKET OWNERS CHOOSE LEHIGH OPEN TYPE EQUIPMENT



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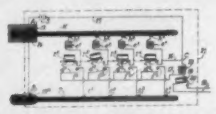
PATENTS

Week of May 23

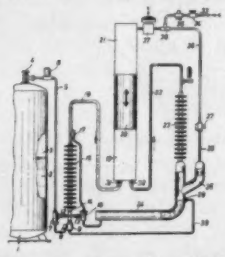
2,984,913. AUTOMATIC CONTROL FOR AIR CONDITIONING MEANS. Pierre Charles Jean Gilson, Campagne-lez-Wardrecques par Wardrecques, France.



4. In a drying installation comprising a drier, an air conditioner for supplying heated air having a constant drying power to said drier, said air conditioner comprising a heating device, regulating means for the heating device, an input pipe for air taken from an exterior source of air having variable temperature and humidity, this pipe being connected to the heating device, an output pipe for heated air connected to the heating device and adapted to supply heated air to said drier. . . .

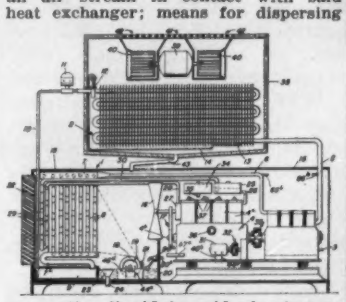
2,984,987. METHOD OF OPERATING A COMBUSTION-DRIVEN COMPRESSION-REFRIGERATING SYSTEM. Peter Schlumbohm, 41 Murray St., New York, N. Y.

1. The method of operating a combustion-driven compression-refrigerating system in which the combustion space of the fuel and the compression space of the refrigerant are in leakage communication with each other, characterized by using a hydrocarbon as fuel and a chemically different hydrocarbon as refrigerant, said fuel-hydrocarbon having a higher condensation pressure than the condensation pressure of said refrigerant-hydrocarbon, whereby fuel leaking from the combustion space into the compression space can be purged from it in vapor phase.

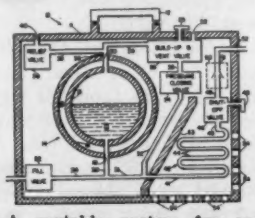


2,984,993. CONTROL MECHANISM FOR COOLING AND CONDENSING EQUIPMENT. Thomas W. Carraway, 3804 Miramar, Dallas, Texas.

1. In evaporative condensing apparatus, a heat exchanger; a compressor; means for delivering fluid from said compressor into said heat exchanger; an internal combustion engine; means for transmitting drive from said internal combustion engine to said compressor; a fan for moving an air stream in contact with said heat exchanger; means for dispersing evaporative liquid in said air stream; means for starting said internal combustion engine and said fan. . . .

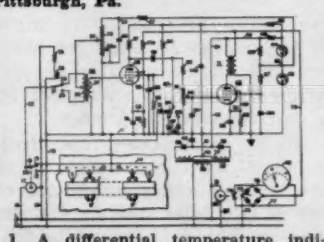


2,984,994. COOLING SYSTEM. Dale L. Hankins, Bettendorf, Iowa, assignor to The Bendix Corp., a corporation of Delaware.



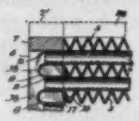
1. A portable system for cooling, controlling the humidity and circulating the air in and through an aviator's suit which employs a liquid oxygen to gaseous oxygen conversion unit comprising a thin shell housing having said liquid oxygen to gaseous oxygen conversion unit disposed therein, a liquid storage vessel. . . .

2,985,016. DIFFERENTIAL TEMPERATURE RECORDER. Robert L. Wright, Jr., Linthicum, Md., assignor to Westinghouse Electric Corp., East Pittsburgh, Pa.



1. A differential temperature indicator comprising a plurality of thermocouples, first circuit means for comparing the outputs of said thermocouples, second circuit means including chopper, biasing potentiometer, a voltage amplifier supplied from said chopper and potentiometer, a power amplifier connected to be controlled by the voltage amplifier and an indicator actuated by the power amplifier for indicating the direction and magnitudes of said outputs, said biasing potentiometer providing reference bias of a magnitude for providing a zero indication during zero output from said thermocouples, and third circuit means shunting the output of the voltage amplifier for preventing false direction indications in said second circuit means during high reverse differential temperature thermocouple outputs.

2,985,433. HEAT EXCHANGER. Clyde S. Simpelaar, Racine, Wis., assignor to Modine Mfg. Co., Racine, Wis.



1. In a heat exchange structure, the combination of a plurality of relatively flat fluid passes, each having a pair of substantially parallel side walls and relatively narrow edge walls, said flat fluid passes being similarly arranged in spaced relation, closure members interposed between successive flat fluid passes adjacent the open ends thereof, corner members at each corner of the passes so assembled, each corner member being generally L-shaped in transvers section, the adjacent faces of each corner member having notches therein of a size and shape to receive the edge portions of the respective flat fluid passes and closure members, said flat fluid passes, closure members and corner members being joined together in fluid tight relations.

2,985,434. REGENERATOR. Stewart A. Boring, Elio J. Speca, and Stephen J. Zierak, Wellsville, N. Y., assignors to The Air Preheater Corp., New York, N. Y.

Heat exchange apparatus adapted to transfer heat between two confined fluids comprising in combination a series of envelopes that include unitary walls spaced apart by ligaments and having a pair of side closure bars at the sides thereof parallel to the ligaments and adapted to enclose a first passageway therethrough for a low pressure fluid; end closure bars welded

(Continued on next page)

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SALES MANAGER — seeking opportunity with progressive company. Fifteen years' air conditioning and refrigeration sales, engineering and management. Registered engineer. Age 43, excellent health, neat appearance, good public speaker. Will travel. BOX A6855, Air Conditioning, Heating & Refrigeration News.

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AIR CONDITIONING and heating equipment sales engineer. Major manufacturer of air conditioning and heating equipment has an opening for sales office manager in the Memphis, Tennessee area. Applicant to have broad experience in air conditioning and heating, in sales application and contacts with architects and engineers. Excellent company benefits and remuneration plan are provided. Send resume outlining past performance to DUNHAM-BUSH, INC., 179 South Street, West Hartford 10, Connecticut.

EXCEPTIONAL OPPORTUNITY for export air conditioning and refrigeration engineers. Opportunity available for experienced air conditioning and refrigeration sales engineers to become associated with an expanding export department of a leading U. S. manufacturer. Positions available in Beirut, Hong Kong and Mexico City. Qualified applicants must be bilingual and experienced in field application engineering and sales promotion. Excellent company benefits and remuneration plan are provided for the successful applicants. Send fully detailed resume with photograph to DUNHAM-BUSH, INC., 179 South Street, Hartford 10, Conn., U.S.A.

LABORATORY TECHNICIANS — Experienced in the test of air conditioning equipment for second and third shift operations. Permanent positions with well-established, employee-owned, independent organization serving large industry groups. Good pay plus shift bonus and recognition of responsible personal performance. Send resume to ELECTRICAL TESTING LABORATORIES, INC., New York 21, New York.

MANUFACTURERS' REPRESENTATIVES—Our publically owned company desires established men to handle Ice Mart, the compact ice cube maker and vendor. Give references, experience, present or previous lines handled, territory covered or desired. Contact: Marketing Director, NORTH AMERICAN VENDING MFG. CORP., 110 Jericho Turnpike, Floral Park, N. Y.

SERVICE MANAGER to manage factory branch. Experienced in selling and servicing commercial and industrial central air conditioning and warm air heating installations. National manufacturer now expanding operations requires man with experience in selling service contracts to building maintenance managers. Must presently be living and working in large metropolitan city. Salary, commission and generous share of branch profits. Must have car. Send complete resume and snapshot. P. O. BOX 2092, Charlotte 1, N. C.

SALES ENGINEER, technical graduate or equivalent with refrigeration and sales experience. Age 23 to 36. Interesting work calling on contractors, wholesalers and air conditioning and refrigeration manufacturers in established territories for a nationally known control manufacturer. Starting salary based on experience. Replies should contain complete resume of education and experience. All replies will be kept confidential. BOX A6829, Air Conditioning, Heating & Refrigeration News.

FIELD SERVICE engineer—opportunity for experienced refrigeration service man, under 40, to handle field service in limited areas with headquarters in Buffalo, New York. Food store experience preferred. Must be free to travel. Willing to move at company expense if necessary. High school (or better) education. Give full details, with five references and send photograph with first letter. Salary, expenses, insurance, welfare and other benefits. BOX A6852, Air Conditioning, Heating & Refrigeration News.

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FOR SALE — Bostich power stapling machine. Floor mounted model S 25 C. 25" throat. Uses spooled wire. Ideal for making filters, roof jacks, and many other operations. Cost new over $1500.00. Price now at $500.00 for quick sale. For photograph of machine and sample of work performed, write to ALPHA AIR CONDITIONING & HEATING COMPANY, P. O. Box 243, Tulsa, Oklahoma.

SURPLUS EQUIPMENT—New 3 ton air handling units—D.E. coil with capillary refrigerant control and direct driven blower assembly, insulated cabinet. $115.00 each. In quantities of 5, $100.00 each. ARCCO, INC., 2201 Grand Avenue, GR 1-7771, Kansas City, Missouri.

SEALED SYSTEMS wiring simplified —First factual condensation of basic compressor electrical circuitry in five fundamental diagrams on one big wall chart. Covers virtually all sealed systems wiring essentials of single phase air conditioner, refrigerator, freezer or remote commercial units manufactured in United States. $1.69 or 4 for $5.75 postpaid. FRIGID EQUIPMENT CO., Dept. AH&RN, 1340 St. Stephens Road, Mobile, Alabama.

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NOTICE: DISTRIBUTORS, dealers, servicemen, users refrigeration equipment—repair parts available all models Baker ammonia and Freon compressors. Also models 6B and F6B ammonia compressors. We are exclusive Baker export sales office. Manufacturers' export agents refrigeration, air conditioning and allied equipment. THE KEISER COMPANY, 1555 W. 79th St., Chicago 20, Illinois.

ATTENTION REFRIGERATION Servicemen. Send for catalog listing values in refrigeration and air conditioning parts, relays, capacitors, compressors. Savings up to 50%. WALTER W. STARR, 2833 Lincoln Ave., Chicago 13, Illinois.

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MISCELLANEOUS

FUNDAMENTALS of refrigeration and basic service techniques are spelled out in K. M. Newcum's "New Master Service Manual" N-1. A bargain at $1.50. See your wholesaler or order from BUSINESS NEWS PUBLISHING CO., Dept. B, 450 W. Fort, Detroit 26, Mich.

THE MASTER SERVICE MANUALS - - -

— — — and other books of the Refrigeration Library are depended upon as textbooks in trade schools from coast to coast

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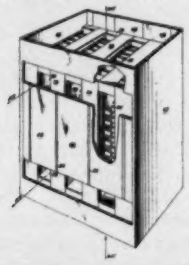
PATENTS

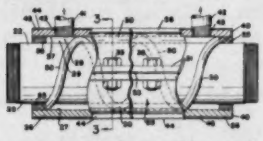
(Continued from preceding page)

normal to the side closure bars between opposite ends of adjacent envelopes to provide a series of inter-



envelope passageways for a high pressure fluid; a metallic plate coextensive with each of said unitary walls bonded thereto and having rows of apertures therein. . . .

2,985,435. HEAT-TRANSFER APPARATUS. Frank Robert Gross, 3926 Wood Thrush Rd., Akron 13, Ohio.



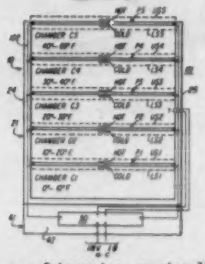
1. In a readily assembled and disassembled heat-transfer apparatus consisting essentially of a central hollow cylindrical tubular member having a heat-conducting wall portion and being open at each end for the passage of fluids therethrough, a lengthwise sectional casing for said heat-conducting wall portion extending substantially the length of said heat-conducting wall portion and having an inner substantially cylindrical surface of a diameter sufficiently greater than the outside diameter of said heat-conducting wall portion to provide an annular space of limited cross-sectional area and of substantially uniform radial distance between the cylindrical wall surfaces defining said annular space, resiliently deformed plastic annular sealing means at each end of the said annular space to form an annular fluid-tight chamber. . . .

DESIGNS

190,390. SPACE THERMOSTAT. William D. Gibson, Portland, Ore., assignor to Iron Fireman Mfg. Co., Portland, Ore.

Week of May 30

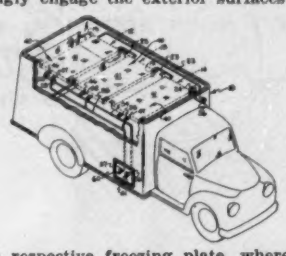
2,986,009. THERMO-ELECTRIC REFRIGERATORS. Joseph J. Gaysowski, Chicago, Ill., assignor to General Electric Co., a corporation of New York.



1. In a refrigerator, upstanding hollow heat-insulating cabinet structure, a plurality of substantially horizontally disposed partitions arranged in said cabinet structure in substantially vertically spaced-apart relation and defining therein a plurality of chambers arranged in a tier, a plurality of thermoelectric piles respectively arranged in said partitions, each of said piles including a plurality of thermocouples each provided with a hot junction and a cold junction, the hot junctions of the thermocouples in each of said piles being arranged on the upper side of the associated partition and the cold junctions of the thermocouples in each of said piles being arranged on the lower side of the associated partition, and means for energizing said piles. . . .

2,986,014. DEFROSTING APPARATUS FOR REFRIGERATOR COMPONENTS AND METHOD. Thomas A. Schilling, 8303 Thoreau Dr., Bethesda, Md.

1. A method of conditioning and defrosting freezing plates having a solidified eutectic therein which includes enclosing each freezing plate in a sealed pliable bag having a film of anti-freeze solution between the bag and the exterior surfaces of the plate, then creating a negative pressure within each bag to cause the same to snugly engage the exterior surfaces of

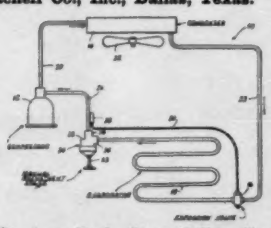


the respective freezing plate, whereby ice may subsequently collect on the freezing plate during the course of refrigeration effected by said freezing plate, then admitting compressed air into each bag to enlarge the same whereby the ice collected on the outer surface of the bag is cracked and dislodged therefrom, and repeating the steps as prescribed.

2,986,013. REFRIGERATION. Elmer W. Kearfoss, Jr., Philadelphia, Pa., assignor to Philco Corp., Philadelphia, Pa.

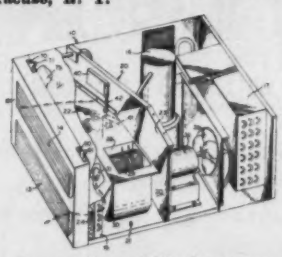
1. In a production of frozen masses, the steps comprising: rotating a flexible mold to centrifugally retain liquid introduced therein and to flex the mold from a first position to a second position; lowering the temperature of the liquid to freeze the same while the rotating mold is in said second position; and decelerating the rotating mold to provide for return thereof to said first position, and consequent freeing of the same from the mold.

2,986,015. REFRIGERATION SYSTEM CONTROL. Orville Mitchell, Dallas, Texas, assignor to John E. Mitchell Co., Inc., Dallas, Texas.



10. A method of regulating the flow of refrigerant into an evaporator in a compressor-condenser-evaporator type of closed refrigerant circuit; comprising the steps of: regulating flow into the evaporator so as to maintain an approximately constant superheat at a point adjacent the evaporator outlet; producing a second stage expansion of refrigerant at the outlet, and employing the cooling effect of the second stage expansion as the control for the rate of flow into the evaporator.

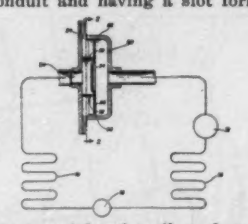
2,986,016. CONTROL MECHANISM FOR AIR CONDITIONING APPARATUS. John N. Gillham, Louisville, Ky., and James R. Del Signore, North Syracuse, N. Y., assignors to Carrier Corp., Syracuse, N. Y.



1. In an air conditioning apparatus including a refrigeration system having a compressor and a cooling element, a two-speed fan for directing air into heat exchange relationship with the cooling element; a manually adjustable temperature responsive control regulating the operation of the fan and the compressor to shut off the compressor, thus deactivating the refrigeration system when the temperature in the conditioned area reaches a given level, said control causing the fan to operate at high speed during normal cooling, and at low speed prior to compressor shut off, whereby rehumidification effects attendant cycling of the compressor will be reduced.

2,986,017. REFRIGERATING APPARATUS. Mervin R. Butts, West Milton, Ohio., assignor to General Motors Corp., Detroit, Mich.

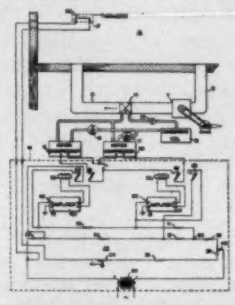
3. A refrigerating system including a compressor and an evaporator, means including a conduit for conveying refrigerant from said evaporator to said compressor, said compressor being arranged to move refrigerant through said conduit, compressor overload preventing means comprising a bimetallic cylindrical element loosely disposed in said conduit and having a slot formed



in its one peripheral wall, and means whereby gas flowing from said evaporator to said compressor is required to flow through said slot.

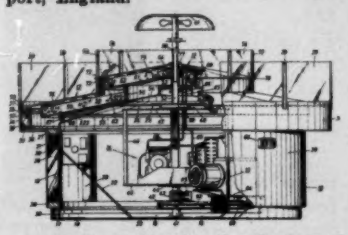
2,986,018. CONTROL APPARATUS REFRIGERATION SYSTEM. Axel B. Algren, Minneapolis, and Edwin P. Snyder, Robbinsdale, Minn.; said Snyder assignor to Minneapolis-Honeywell Regulator Co., Minneapolis, Minn.

1. In a temperature and dehumidification control apparatus, a refrigeration heat exchanger mounted in a duct system so that air from a space can be forced therethrough for cooling and dehumidifying, plurality of stages of



refrigeration compressing means, means connecting said stages of compressing means to said heat exchanger, temperature responsive means responsive to space temperature, and means connecting said temperature responsive means to control said plurality of stages so that upon a rise in the space temperature said stages are energized by said responsive means simultaneously and upon a drop in the space temperature said stages are shut down in sequence.

2,986,019. ARTICLE DISPLAY APPARATUS. William Richard Armour Happer, 14 Weld Rd., Birkdale, Southport, England.



1. In apparatus for the display of articles such as perishable and frozen food and food products, the combination comprising an open-topped base structure, a stationary generally circular outer wall member mounted about the lower part of said base structure, a stationary vertically projecting generally transparent upper outer wall member mounted about said base structure above said lower outer wall member and defining a generally cylindrical open-topped space. . . .

(To Be Continued)

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In one sturdy carrying case, the kit also includes an adjustable gas pressure regulator, torch handle, and hose—everything for the installation, repair, and everyday maintenance of all types of refrigeration and air conditioning systems. See your local *Prest-O-Lite* dealer. Or write Linde Company, Division of Union Carbide Corporation, 270 Park Avenue, New York 17, N. Y.

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Ramey Represents Kerotest In 3 States

PITTSBURGH—The appointment of Del L. Ramey as sales representative for the Brass Div. of Kerotest Mfg. Co. in Texas, Oklahoma, and New Mexico, was announced recently.

D. L. Ramey

Ramey has been established for the past 12 years as a representative of major manufacturers of heating, refrigeration, and air conditioning products.

His offices are at 3640 Hanover, Dallas, with Kerotest warehouse facilities located at 49 San Jacinto St., Houston 2, Texas.

So. Cal. RACCA Honors Jacobsen at Farewell

LOS ANGELES—Members of the Southern California refrigeration and air conditioning industry paid special tribute recently to L. P. "Jake" Jacobsen of York Corp. on the occasion of his leaving to assume a higher post with his company in Cleveland.

Jacobsen, who served as president of the Southern California Chapter of RACCA since the first of the year, was honored by the association's board of directors at its meetin July.

He was accorded particular recognition for his service and efforts in establishing the Joint Journeymen and Apprentice Training program in the southern California area.

Gas Heat--

(Continued from Page 1, Col. 4)

totals, 469,600, 69,621, and 58,500.

July and seven-month shipment totals for other types of gas heating equipment were reported by GAMA as follows:

Vented recessed wall heaters—24,500 units shipped in July, a decrease of 13.4% from last year's 28,300. The seven-month totals were 171,800 this year and 189,000 last year, a drop of 9.1%.

Room heaters and other types of gas direct heating equipment—July shipments numbered 98,400 units, 31.1% less than the 142,900 heaters dispatched in the same month of 1960. Seven-month totals were 450,400 this year and 548,500 last year, a 17.9% decline.

Gas floor furnaces—Shipments of this equipment increased 3.9% in July, from 5,100 last year to 5,300 this year. The seven-month amount, 30,900, was down 14.2% from last year's 36,000.

Gas unit heaters and duct furnaces—Sales of this equipment, which is used primarily in commercial and industrial applications, numbered 9,200 in July, 3.2% less than the July a-year-ago amount, 9,500. In the first seven months of this year, 79,600 units were dispatched, 4.4% less than last year's 83,300.

The GAMA report is based on a monthly survey of manufacturers who account for a majority of the output in each category, and their responses are expanded to show national shipment estimates.

Vulcan-Hart--

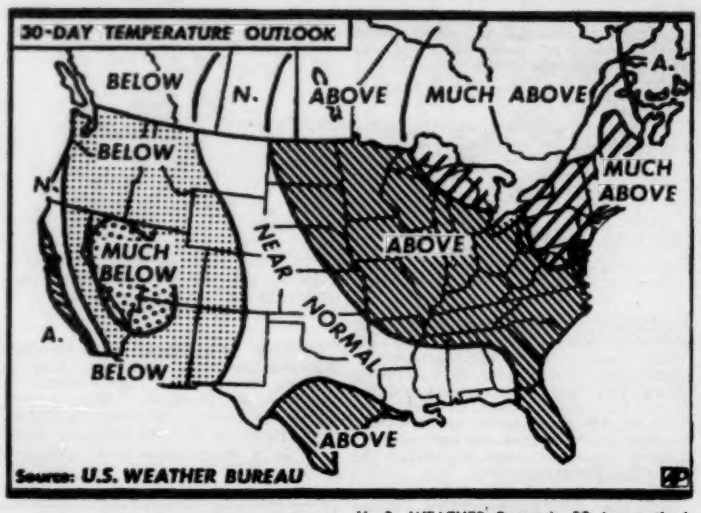
(Continued from Page 1, Col. 4)

$1,000,000 a year and it has been a profitable business through the years," he added.

Weiss is retiring from active management at the end of the year, and his nephew, Michael Weiss, will become general manager.

Vulcan-Hart, founded in 1865, has rapidly expanded in recent years. It purchased the Autosan Div. of the Colt Mfg. Co., Hartford, Conn., in 1956. In 1957, it merged with Globe American Co. of Kokomo, Ind.

This year it joined the Brightside Engineering Holdings Ltd. and Moorwoods of Sheffield, England, in the formation of a new commercial cooking equipment company—Moorwood-Vulcan Ltd.—which will market its products in Great Britain, Europe, and Africa.



U. S. WEATHER Bureau's 30-day outlook for September calls for more air conditioning weather all along the Atlantic Seaboard, the Midwest, the Texas Gulf coast, and the California coastal strip. New England and Middle Atlantic states will be "favored" with temperatures much above normal.

Also this year Vulcan-Hart purchased 11% of the outstanding stock of Bastian-Blessing Co. of Chicago, maker of food service equipment and valves and controls for the gas industry.

ASHRAE Moves To Engineers Building

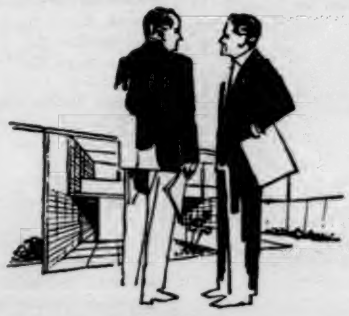
NEW YORK CITY — American Society of Heating, Refrigerating & Air-Conditioning Engineers has moved its headquarters to the new stainless steel, air conditioned United Engineering Center at 345 E. 47th St. here.

For the first time since the merger that created ASHRAE in 1959, headquarters personnel of the old American Society of Refrigerating Engineers and the American Society of Heating Ventilating Engineers, are united in one location, the society said.

The ASHRAE telephone number is PLaza 2-6800, Area Code 212.

The 20-story United Engineering Center will house 19 major engineering groups. It faces United Nations Plaza.

2 to 10 Tons Capacity



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